Source: **T1**

Title: **CRs to TS 34.123-1 v.5.10.0 for approval**

Agenda item: **6.1.3**

Document for: **Approval**

This document contains the CRs to TS 34.123-1 v.5.10.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Doc-2nd-Level	*CR*	*Rev*	*Phase*	*Subject*	*Cat*	*Version-Current*	*Version-New*
T1-050294	1040	-	Rel-5	Modification of SIB5 content for 18.2.5.2a.1 and Addition of Specific Message Content for Radio Bearer Setup message in section 18.2.5.2a.	F	5.10.0	5.11.0
T1-050427	1041	-	Rel-5	Correction to Package 2 RRC test case 8.4.1.19 (Revison of T1-050046, T1-050291)	F	5.10.0	5.11.0
T1-050446	1042	-	Rel-5	CR to 34.123-1 R5: New GMM test case for verification of follow-on request pending indicator.	F	5.10.0	5.11.0
T1-050174	1043	-	Rel-5	Corrections to A-GPS test cases	F	5.10.0	5.11.0
T1-050457	1044	-	Rel-5	Addition of GPS scenario and A-GPS assistance data to 34.123	F	5.10.0	5.11.0
T1-050002	1045	-	Rel-5	Correction to Package 2 RRC test case 8.3.1.10	F	5.10.0	5.11.0
T1-050006	1046	-	Rel-5	Correction to Package 4 NAS test case 12.4.1.4a	F	5.10.0	5.11.0
T1-050007	1047	-	Rel-5	Correction to Package 4 NAS test case 12.4.1.4d Proc 1	F	5.10.0	5.11.0
T1-050008	1048	-	Rel-5	Correction to Package 4 RRC test case 8.1.3.5	F	5.10.0	5.11.0
T1-050010	1049	-	Rel-5	Correction to Package 1 RRC test case 8.3.4.3	F	5.10.0	5.11.0
T1-050011	1050	-	Rel-5	Correction to Package 4 NAS test case 9.4.3.5	D	5.10.0	5.11.0
T1-050015	1051	-	Rel-5	Correction to Package 1 RRC test case 8.4.1.1	F	5.10.0	5.11.0

T1-050016	1052	-	Rel-5	Correction to Package 3 RRC test case 8.4.1.37	D	5.10.0	5.11.0
T1-050017	1053	-	Rel-5	Correction to Package 3 RRC test case 8.1.2.10	D	5.10.0	5.11.0
T1-050022	1054	-	Rel-5	Correction to GCF P4 RRC 8.3.1.18	F	5.10.0	5.11.0
T1-050023	1055	-	Rel-5	Correction to Package 1 RRC test case 8.1.2.2	F	5.10.0	5.11.0
T1-050024	1056	-	Rel-5	Correction to Package 4 RRC test case 8.4.1.26	F	5.10.0	5.11.0
T1-050025	1057	-	Rel-5	Correction to default contents of System Information Block 3 and 4 for Idle Mode test cases	F	5.10.0	5.11.0
T1-050030	1058	-	Rel-5	Correction to GCF P4 IR_U 8.3.7.5	F	5.10.0	5.11.0
T1-050032	1059	-	Rel-5	Correction to Package 2 MultiRAT GMM test case 12.8	F	5.10.0	5.11.0
T1-050041	1060	-	Rel-5	Correction to Package 4 RAB test case 14.4.2a	F	5.10.0	5.11.0
T1-050044	1061	-	Rel-5	Correction to NAS GMM test cases 12.4.2.6.1 and 12.4.2.6.2 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050049	1062	-	Rel-5	Correction to P3 RRC test cases 8.4.1.40	F	5.10.0	5.11.0
T1-050050	1063	-	Rel-5	Correction of USIM HPLMN information in idle mode test cases	F	5.10.0	5.11.0
T1-050053	1064	-	Rel-5	Correction of 'Test requirements' in high priority test case 14.2.32.2 (GCF WI -12) and in low priority test cases 14.2.31.1, 14.2.31.2, 14.2.35.1 and 14.2.35.2.	F	5.10.0	5.11.0
T1-050054	1065	-	Rel-5	Corrections to GCF P3 test cases 14.2.51.1, 14.2.51a.1, 14.2.51b.1 and to low priority test cases 14.2.38d, 14.2.51a.2, 14.2.51b.2	F	5.10.0	5.11.0
T1-050058	1066	-	Rel-5	Correction to RAB test case 14.2.34.1 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050060	1067	-	Rel-5	CR to 34.123-1Rel-5: Correction of 8_4_1_2A for TDD	F	5.10.0	5.11.0
T1-050061	1068	-	Rel-5	CR to 34.123-1Rel-5: Correction of 8_4_1_4A for TDD	F	5.10.0	5.11.0
T1-050062	1069	-	Rel-5	CR to 34.123-1Rel-5: Correction of 8_4_1_6A for TDD	F	5.10.0	5.11.0
T1-050063	1070	-	Rel-5	CR to 34.123-1Rel-5: Correction of 8_4_1_8A for TDD	F	5.10.0	5.11.0
T1-050071	1071	-	Rel-5	Corrections to Package 4 RRC test case 8.1.2.3 & Package 1 RRC test case 8.1.2.9	F	5.10.0	5.11.0
T1-050074	1072	-	Rel-5	Corrections to HSDPA RRC test cases 8.2.2.36, 8.2.2.37 & 8.2.2.38	F	5.10.0	5.11.0

T1-050098	1073	-	Rel-5	Corrections to Package 4 GMM test case 12.9.7c	F	5.10.0	5.11.0
T1-050107	1074	-	Rel-5	Editorial correction to P1 GMM test case 12.9.1	F	5.10.0	5.11.0
T1-050127	1075	-	Rel-5	Correction to Package 2 MAC test case 7.1.3.1	F	5.10.0	5.11.0
T1-050128	1076	-	Rel-5	Correction to Radio Bearer Setup used for RLC testing	F	5.10.0	5.11.0
T1-050136	1077	-	Rel-5	Correction to MAC test cases 7.1.3.2	F	5.10.0	5.11.0
T1-050137	1078	-	Rel-5	Correction to MAC-hs test cases 7.1.5.2	F	5.10.0	5.11.0
T1-050160	1079	-	Rel-5	Correction to GCF low priority RRC test cases	F	5.10.0	5.11.0
T1-050161	1080	-	Rel-5	Correction to GCF high priority (WI-010) RRC test cases	F	5.10.0	5.11.0
T1-050162	1081	-	Rel-5	Correction to GCF high priority (WI-12) RRC test cases	F	5.10.0	5.11.0
T1-050163	1082	-	Rel-5	Correction to GCF high priority (WI-14) RRC test cases	F	5.10.0	5.11.0
T1-050168	1083	-	Rel-5	Correction of 3rd party transfer A-GPS test cases	F	5.10.0	5.11.0
T1-050170	1084	-	Rel-5	Correction of UE-assisted A-GPS test cases	F	5.10.0	5.11.0
T1-050193	1085	-	Rel-5	Correction to Approved RRC Package 3 TC 8.4.1.33	F	5.10.0	5.11.0
T1-050203	1086	-	Rel-5	CR to TS 34.123-1 v5.a.0 - Correction to Package 2 Test Case 6.2.2.2	F	5.10.0	5.11.0
T1-050204	1087	-	Rel-5	CR to TS 34.123-1 v5.a.0 - Correction to Low-Priority Test Case TC 8.1.8.3	F	5.10.0	5.11.0
T1-050206	1088	-	Rel-5	CR to TS 34.123-1 v5.a.0 - Editorial corrections to Package 4 test case 8.3.7.5 and Package 3 test case 8.4.1.31	F	5.10.0	5.11.0
T1-050232	1089	-	Rel-5	Correction to 34.123, clause 6, idle mode test case 6.1.2.9	F	5.10.0	5.11.0
T1-050237	1090	-	Rel-5	Correction to Package 1 Testcase 8.4.1.5	F	5.10.0	5.11.0
T1-050272	1091	-	Rel-5	Correction to Package 2 RRC test case 8.1.10.1	F	5.10.0	5.11.0
T1-050273	1092	-	Rel-5	Correction to RRC test case 8.1.1.10 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050274	1093	-	Rel-5	Correction to NAS GMM test case 12.4.1.5 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050275	1094	-	Rel-5	Correction to RRC test cases 8.1.2.11 and 8.2.1.24 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050276	1095	-	Rel-5	Correction to Package 2 RRC test case	F	5.10.0	5.11.0

				8.4.1.7			
T1-050277	1096	-	Rel-5	Correction to NAS MM test case 9.4.2.4 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050285	1097	-	Rel-5	Correction to Package 2 Testcase 8.2.4.1	F	5.10.0	5.11.0
T1-050287	1098	-	Rel-5	CR to 34.123-1 : Correction to P4 RRC test case 8.2.2.35	F	5.10.0	5.11.0
T1-050290	1099	-	Rel-5	Correction to Package 2 RRC test case 8.4.1.23 (Revision T1-050009)	F	5.10.0	5.11.0
T1-050299	1100	-	Rel-5	Correction to GCF priority 2 (WI-010) RRC test case 8.4.1.14	F	5.10.0	5.11.0
T1-050402	1101	-	Rel-5	Correction to Approved RRC Package 3 TC 8.4.1.31	F	5.10.0	5.11.0
T1-050405	1102	-	Rel-5	Deletion of postamble of switch-off UE and detach in GMM test cases.	F	5.10.0	5.11.0
T1-050407	1103	-	Rel-5	Correction to Package 2 RRC test case 8.3.1.31 (Revision of T1-050004)	F	5.10.0	5.11.0
T1-050410	1104	-	Rel-5	Correction to Package 4 Inter-system handover test case 8.3.7.12	F	5.10.0	5.11.0
T1-050411	1105	-	Rel-5	Correction to Package 1 RRC test case 8.4.1.5	F	5.10.0	5.11.0
T1-050412	1106	-	Rel-5	CR to 34.123-1 Rel-5; Corrections to RRC test cases on seamless SRNS relocation (revision of T1-050084)	F	5.10.0	5.11.0
T1-050413	1107	-	Rel-5	CR to 34.123-1 Rel-5; New RRC test case on seamless SRNS relocation using Radio Bearer Reconfiguration (revision of T1-050085)	B	5.10.0	5.11.0
T1-050414	1108	-	Rel-5	CR to TS34.123-1; New RRC test cases for Radio Bearer Setup Procedure	F	5.10.0	5.11.0
T1-050415	1109	-	Rel-5	Correction to WI-012 test case 8.1.6.3	F	5.10.0	5.11.0
T1-050416	1110	-	Rel-5	CR to 34.123-1 Rel-5: Correction to P4 RRC test case 8.3.11.4	F	5.10.0	5.11.0
T1-050417	1111	-	Rel-5	Correction to Package 4 NAS test cases 12.6.1.3.1 , 12.6.1.3.2 and 12.9.6	F	5.10.0	5.11.0
T1-050421	1112	-	Rel-5	Corrections to HSDPA RRC test case 8.2.2.39 (revision of T1-050270)	F	5.10.0	5.11.0
T1-050425	1113	-	Rel-5	Correction to HSDPA generic radio bearer test procedure	F	5.10.0	5.11.0
T1-050428	1114	-	Rel-5	Addition of inter-RAT handover test case (UE supporting DTM) to 34.123-1	F	5.10.0	5.11.0
T1-050429	1115	-	Rel-5	Correcting Initial Conditions of Inter-RAT 8.3.7. test cases	F	5.10.0	5.11.0
T1-050430	1116	-	Rel-5	CR to TS34.123-1 Rel-5; Addition of new HSDPA test case (Revision of T1-050179,	F	5.10.0	5.11.0

				T1-050265)			
T1-050431	1117	-	Rel-5	CR to TS34.123-1 Rel-5; Correction to TC 8.2.4.36 (Revision of T1-050181, T1-050266)	F	5.10.0	5.11.0
T1-050432	1118	-	Rel-5	Correction to GCF P4 IR_U 8.3.7.9 and 8.3.7.13 (Revision of T1-050031 & T1-050408)	F	5.10.0	5.11.0
T1-050434	1119	-	Rel-5	Alignment of IE Names used in Clause 12 to the core specification (revision of T1-050021)	D	5.10.0	5.11.0
T1-050439	1120	-	Rel-5	Correction to Package 4 NAS test case 12.4.1.4c Proc 2 (revision of T1-050040)	D	5.10.0	5.11.0
T1-050440	1121	-	Rel-5	Corrections to Package 4 GMM test case 12.4.1.1b	F	5.10.0	5.11.0
T1-050442	1122	-	Rel-5	Correction to NAS GMM test case 12.3.2.8 (GCF Work Item 12)	F	5.10.0	5.11.0
T1-050443	1123	-	Rel-5	Correction to GMM clause	F	5.10.0	5.11.0
T1-050447	1124	-	Rel-5	Correction to Package 4 NAS test case 12.9.3	F	5.10.0	5.11.0
T1-050448	1125	-	Rel-5	Corrections to Package 4 GMM test case 12.2.1.6.2. (Revision of T1-050097 & T1-050228).	F	5.10.0	5.11.0
T1-050449	1126	-	Rel-5	Correction to Package 4 test case 12.2.1.5d (Revision of T1-050021)	F	5.10.0	5.11.0
T1-050453	1127	-	Rel-5	Correction to Package 3 RB test case 14.2.51a.1	F	5.10.0	5.11.0
T1-050454	1128	-	Rel-5	Correction of A-GPS assistance data sets	F	5.10.0	5.11.0
T1-050471r1	1129	-	Rel-5	CR to 34.123-1 Rel-5: Correction to P4 RRC test case 8.1.7.1d (Revision of T1-050249)	F	5.10.0	5.11.0
T1-050459	1130	-	Rel-5	CR to TS34.123-1 Rel-5; Correction to HSDPA test cases (Revision of T1-050182)	F	5.10.0	5.11.0
T1-050463	1131	-	Rel-5	Corrections to HSDPA RRC test cases 8.2.1.28 & 8.2.3.34 (revision of T1-050073)	F	5.10.0	5.11.0
T1-050465	1132	-	Rel-5	CR to 34.123-1 Rel-5; New HSDPA RRC test cases (revision of T1-050267)	B	5.10.0	5.11.0
T1-050466	1133	-	Rel-5	Corrections to HSDPA RRC test case 8.2.2.40 (revision of T1-050271)	F	5.10.0	5.11.0
T1-050470	1134	-	Rel-5	Correction to MAC-hs test cases 7.1.5.6	F	5.10.0	5.11.0
T1-050205r1	1135	-	Rel-5	CR to TS 34.123-1 v5.a.0 - Correction to GCF P3 Test Case 8.3.2.12	F	5.10.0	5.11.0
T1-050467r1	1136	-	Rel-5	Generic test procedure for HS-DSCH multi-RB combinations	F	5.10.0	5.11.0

T1-050475	1137	-	Rel-5	Addition of details to HSDPA radio bearer test case 14.6.3a (new), 14.6.4, 14.6.4a (new), 14.6.5 and 14.6.5a (new)	F	5.10.0	5.11.0
T1-050468	1138	-	Rel-5	Addition of details to HSDPA radio bearer test case 14.6.3	F	5.10.0	5.11.0

3GPP TSG-T1 Meeting #26
Bangalor, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050294

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1040** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Modification of SIB5 content for 18.2.5.2a.1 and Addition of Specific Message Content for Radio Bearer Setup message in section 18.2.5.2a.
Source:	⌘	IDCC
Work item code:	⌘	TEI
Date:	⌘	26/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘[H **1) SIB6 Indicator**

Clause **18.2.5.2a.1** specifies that SIB5 and SIB6 content should be the same as per 34.108 section 6.1.1.
The SIB5 content in section 6.1.1 of 34.108, has the SIB6 indicator set to TRUE, which suggests that SIB 6 should be present.

However, **34.108 section 6.1.0a.4.1** indicates that in test cases where two S-CCPCH are present, SIB 6 should not be transmitted. Therefore, the SIB6 Indicator in SIB5 should be set to FALSE.

2) Specific Message Content required for Radio Bearer Setup

In the test cases under clause **18.2.5.2a** two PS RABs are configured, which are mapped onto the same Transport Channel in UL and DL.

Therefore, the Radio Bearer Setup message sent is necessarily different from that mentioned in **TS 34.108 clause 9**.

Summary of change: ⌘
1) Added Specific Message Content for SIB5 in which the "SIB6 indicator" is set to "FALSE".
2) Added specific message content for the Radio Bearer Setup message for this test case.

Consequences if not approved: ⌘ Inconsistency will remain between 34.123-1 & 34.108

Clauses affected:	⌘	Section 18.2.5.2a, 18.2.5.2a.1.3			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects Rel-5, Rel-4 and R99 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<<START OF Modified Section>>

18.2.5.2a Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.4.2a.

This radio bearer configuration is tested with three different SYSTEM INFORMATION (BCCH) configurations:

1. The contents of System Information Block type 5 ~~and 6 as specified in TS 34.108, clause 6.1.1~~ shall be as per the message specific content below.

   Two SCCPCHs are used in this SYSTEM INFORMATION configuration. The **first SCCPCH** carries the **PCH** and the **second SCCPCH** carries the **FACH for two Interactive/Background 32 kbps PS RABs** and the **FACH for SRBs on CCCH/ DCCH/ BCCH**.

   This configuration is verified in test case 18.2.5.2a.1.

2. The contents of System Information Block type 5 as specified in TS 34.108, clause 6.1.3.

   Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The **first SCCPCH** carries the **PCH** and both the **second and third** SCCPCHs carry the **FACH for two Interactive/Background 32 kbps** PS RABs and the **FACH for SRBs on CCCH/ DCCH/ BCCH**.

   This configuration is verified in test case 18.2.5.2a.2.

3. The contents of System Information Block type 5 and 6 as specified in TS 34.108, clause 6.1.2.

   Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The **first SCCPCH carries the PCH**. The second SCCPCH carries the **FACH for CTCH** (Cell Broadcast Service) and the **FACH for SRBs on CCCH/ BCCH for idle mode UEs**. The **third SCCPCH** carries the **FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs**.

   This configuration is verified in test case 18.2.5.2a.3.

Specific Message Content for Radio Bearer Setup message to be used for these test cases:

Use the RADIO BEARER SETUP message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
- RAB information for setup	
- RAB info	(AM DTCH for PS domain)
- RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	20
- PDCP Info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	4
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	7
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH

Information Element	Value/remark
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RAB identity	0000 0110B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	24
- PDCP info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	4
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	10
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	10
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH

Information Element	Value/remark
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10

18.2.5.2a.1 One SCCPCH: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

18.2.5.2a.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.5.2a.1.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.4.2a and 6.10.3.4.5.3 for the case when **two SCCPCHs** are used in this SYSTEM INFORMATION configuration. The **first SCCPCH** carries the **PCH** and the **second SCCPCH** carries the **FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH**.

To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.3.4.5.3.1 (Interactive/Background **12.8 kbps** PS RAB + Interactive/Background 12.8 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

18.2.5.2a.1.3 Method of Test

The contents of System Information Block type 5 ~~and 6 shall be as specified in TS 34.108, clause 6.1.1~~ per the specific message content below.

See 18.2.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combinations for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TFI	RB7+RB8+SRB (2x12.8 kbps on RACH)
TFS	TF0, bits	1x170

Uplink TFCS:

TFCI	RB7 + RB8
UL_TFC0	TF0

Downlink TFS for SCCPCH#2:

	TFI	RB7 + RB8 (2x32 kbps)	SRBs
TFS	TF0, bits	0x363	0x171
	TF1, bits	1x363	1x171
	TF2, bits	2x363	2x171
	TF3, bits	N/A	3x171
	TF4, bits	N/A	4x171

Downlink TFCS for SCCPCH #2:

TFCI	(RB7+RB8, SRB)
DL_TFC0	(TF0,TF0)
DL_TFC1	(TF0,TF1)
DL_TFC2	(TF0,TF2)
DL_TFC3	(TF0,TF3)
DL_TFC4	(TF0,TF4)
DL_TFC5	(TF1,TF0)
DL_TFC6	(TF1,TF1)
DL_TFC7	(TF1,TF2)
DL_TFC8	(TF2,TF0)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC7	UL_TFC0	DL_TFC0	UL_TFC0	RB7: 376 bits RB8: 376 bits	RB7: 312 bits RB8: No Data
2	DL_TFC8	UL_TFC0	DL_TFC0	UL_TFC0	RB7: 632 bits RB8: 632 bits	RB7: No Data RB8: 632 bits

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB7: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set to achieve verification of all test data sent by SS in downlink, i.e. UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

Specific Message Contents

Use the default parameter values for the system information block 5 with the same type specified in clause

6.1.1 of TS 34.108, with the following exceptions

Information Element	Value/remark
- SIB6 indicator	FALSE

See 18.2.1.1 for test procedure.

18.2.5.2.3.4 Test Requirements

See 18.2.1.1 for definition of step 15

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE shall return
   - for sub-test 1: an RLC SDU on RB7 having the same content as 1 times plus 64 lsb's of the DL RLC SDU sent by the SS.
   - for sub-test 2: an RLC SDU on RB8 having the same content as the DL RLC SDU sent by the SS.

<<End OF Modified Section>>

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan - 04 Feb 2005

Tdoc ⌘T1-050446

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1042** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	CR to 34.123-1 R5: New GMM test case for verification of follow-on request pending indicator.
Source:	⌘	7 layers AG, Vodafone, ETSI MCC 160, Ericsson
Work item code:	⌘	TEI
Date:	⌘	04/02/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Functionality for follow-on request pending indicator set or not is not covered by the current GMM test cases.
Summary of change:	⌘	The following test case is added: 12.2.1.11 PS attach / accepted / follow-on request pending indicator set
Consequences if not approved:	⌘	Functionality remains uncovered by test suite.

Clauses affected:	⌘	12.2.1.11 (new),

	Y	N			
Other specs affected: ⌘		X	Other core specifications	⌘	TS 34.123-2
	X		Test specifications		
		X	O&M Specifications		

Other comments:	⌘	Affects REL-5, REL-4 and R99.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12 Elementary procedure for Packet Switched Mobility Management

[…]

12.2.1.11 PS attach / accepted / follow-on request pending indicator set

12.2.1.11.1 Definition and applicability

UE which supports follow-on request procedure.

12.2.1.11.2 Conformance requirement

1) In UMTS, if the MS wishes to prolong the established PS signalling connection after the GPRS attach procedure, it may set a follow-on request pending indicator on.

. 2) In UMTS, the network should prolong the PS signalling connection if the mobile station has indicated a follow-on request pending in ATTACH REQUEST. The network may also prolong the PS signalling connection without any indication from the mobile terminal.

Reference

3GPP TS 24.008 clause 4.7.3.1.1 and 4.7.3.1.3

12.2.1.11.3 Test purpose

To test the behaviour of the UE if the follow-on request pending indicator can be set on during the attach procedure.

The following cases are identified:

1) follow-on request pending indicator may be set to indicate further signalling messages from the UE

2) follow-on request pending indicator not set, no further signalling messages expected from the UE

12.2.1.11.4 Method of test

Initial condition

System Simulator:

1 cell, operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
Method of context activation

Support of Follow On Proceed Yes/No

Test procedure

1) The UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The SS responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. UE shall set the Follow-ON Request bit to 1 in the ATTACH REQUEST message. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS to finish the PC call establishment. The SS releases the RRC connection and the UE is switched off.

2) The UE is switched on and initiates PS attach (ATTACH REQUEST). UE shall set the Follow-ON Request bit to 0 in the ATTACH REQUEST message. The SS returns the ATTACH ACCEPT message to the UE. The SS verifies UE does not sent any messages on the PS Signalling Connection for 10 seconds. SS releases the RRC connection..

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
0	UE			Detach is performed by the UE using MMI or AT Commands
1	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
2	→		DETACH REQUEST	
3	SS			The SS starts integrity protection.
4	←		DETACH ACCEPT	SS sends Detach Accept message.
5	SS			The SS releases the RRC connection.
6	UE			Initiate a context activation
7	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
8	→		ATTACH REQUEST	The UE requests attach. UE shall set the FOR bit to 1
9	SS			The SS starts integrity protection.
10	←		ATTACH ACCEPT	The SS accepts attach Negotiated Ready timer value IE should not be included Force to standby IE set to “Force to standby not indicated”
11	→		ACTIVATE PDP CONTEXT REQUEST	The UE requests a PDP context activation (with static PDP address), enters the state PDP-ACTIVE-PENDING and starts timer T3380
12	SS			The SS establishes the RAB.
13	←		ACTIVATE PDP CONTEXT ACCEPT	The SS accepts the PDP context activation.
14	SS			The SS releases the RRC connection due to inactivity (no user data transferred)
15	UE			The UE is switched off or power is removed (see ICS).
16	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
18	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE			The UE is powered up or switched on and initiates an attach (see ICS).
20	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
21	->		ATTACH REQUEST	The UE requests attach. The UE shall set the FOR bit to 0.
22			AUTHENTICATION AND CIPHERING REQUEST	
23			AUTHENTICATION AND CIPHERING RESPONSE	
24	SS			The SS starts integrity protection.

25	<-	ATTACH ACCEPT	The SS accepts attach Negotiated Ready timer value IE should not be included Force to standby IE set to “Force to standby not indicated”
26			The SS does not respond and waits for the time of 10 seconds. No further messages are expected from the UE on the current PS Signalling Connection.
27	SS		The SS releases the RRC connection

Specific message contents

None.

12.2.1.11.5 Test requirements

At step 8 the UE shall send an ATTACH REQUEST with FOR bit set to 1

At step 21 the UE shall send an ATTACH REQUEST with FOR bit set to 0.

3GPP TSG-T WG1 #26 **T1-050174**

Bangalore, India. 31st Jan - 4th Feb 2005 **Agenda Item: 8.8.10**

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1043** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to A-GPS test cases
Source:	⌘	Spirent Communications
Work item code:	⌘	TEI
Date:	⌘	20/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘
- No definition of fields to be used in GPS Almanac
- No definition of data to be used in ASSISTANCE DATA DELIVERY messages
- Unecessary clearing of stored assistance data in some tests
- Clearing of stored assistance data missing in some tests
- Expected Sequence charts unclear in some tests
- Changes to test case 17.2.4.5 missing in previous CR
- References to section 17.2.1.3 unclear
- Editorial and formatting errors exist

Summary of change: ⌘
- Fields to be used defined in GPS Almanac in section 17.2.1.3.5.
- Reference to ASSISTANCE DATA DELIVERY message added in section 17.2.1.3.5.
- Unecessary clearing of stored assistance data deleted from tests: 17.2.2.1, 17.2.2.2, 17.2.3.2, 17.2.4.3
- Clearing of stored assistance data added to tests:.17.2.3.3, 17.2.3.8, 17.2.4.5
- Expected Sequence charts clarified in tests:17.2.3.3 and 17.2.4.2
- Test case 17.2.4.5 modified in accordance with changes in a previous CR
- References to section 17.2.1.3 clarified throughout

- Various editorial and formatting corrected

Consequences if not approved: ⌘ Definitions unclear. Unnecessary complexity in test cases. Test cases will not work correctly. Test cases unclear. Editorial erros persist.

Clauses affected:	⌘	17.2.1.3.5, 17.2.2.1, 17.2.2.2, 17.2.3.2, 17.2.3.3, 17.2.3.6, 17.2.3.8, 17.2.3.9, 17.2.4.1, 17.2.4.2, 17.2.4.3, 17.2.4.5, 17.2.4.6, 17.2.4.7, 17.2.4.10			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.2.1.3.5 Response to additional assistance data requests from UE

If the SS needs to send assistance data in response to a request for additional assistance data from the UE, the IE "UE positioning GPS assistance data" is set as follows:

- UE positioning GPS assistance data - UE positioning GPS reference time - UE positioning GPS reference UE position - UE positioning GPS DGPS corrections - UE positioning GPS navigation model - UE positioning GPS ionospheric model - UE positioning GPS UTC model - UE positioning GPS almanac	 Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE
- WNa	Set according to 17.2.1.2
- Satellite information	Set according to 17.2.1.2
- SV Global Health	Not present
- UE positioning GPS acquisition assistance - UE positioning GPS real-time integrity	Set according to 17.2.1.2 if requested by the UE Set according to 17.2.1.2 if requested by the UE

The SS provides navigation-model information for at most four satellites in any one MEASUREMENT CONTROL or ASSISTANCE DATA DELIVERY message; additional satellites are spread across subsequent MEASUREMENT CONTROL or ASSISTANCE DATA DELIVERY messages.

NEXT CHANGED SECTION

17.2.2.1.3 Test Purpose

To verify when an emergency call is initiated by a UE with a USIM, and the network performs a location request using the RRC measurement control procedure by sending Measurement Control message , then the UE respond with a Measurement Report containing UE location.

17.2.2.1.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - ~~the UE shall be in a state where no assistance data is stored in the UE.~~
  - the UE is in state "MM idle" with valid TMSI and CKSN.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Based Network Assisted GPS
- ~~Method of clearing stored GPS assistance data~~

Test procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages. The assistance data includes navigation models for the satellites including a number of non-existing satellites. The last MEASUREMENT CONTROL message orders periodical reporting by sending a MEASUREMENT CONTROL message requesting periodical measurement reporting (1 report, interval 64s).

The UE then performs positioning measurements, calculates "UE Positioning Position Estimate Info" and responds with this in the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. Number shall be one programmed in test USIM EF_{ECC} (Emergency Call Codes), ref. 34.108 clause 8.3.2.21.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE based positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		AUTHENTICATION REQUEST	IE Authentication Parameter AUTN shall be present in the message.
5	-->		AUTHENTICATION RESPONSE	SRES specifies correct value.
6				SS starts security procedure.
7	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
8	<--		CALL PROCEEDING	
9	<--		ALERTING	
10	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
11	<--		CONNECT	
12	-->		CONNECT ACKNOWLEDGE	
13	UE			The DTCH is through connected in both directions.
14	<-		MEASUREMENT CONTROL	
15	<-		MEASUREMENT CONTROL	
16	<-		MEASUREMENT CONTROL	
17	-->		MEASUREMENT REPORT	
18	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 15):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 16):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 17):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	GPS reference time only
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

NEXT CHANGED SECTION

17.2.2.2.3 Test Purpose

To verify when an emergency call is initiated by a UE in the "MM idle, no IMSI" state (no USIM inserted) and the network performs a location request using the RRC measurement control procedure by sending Measurement Control message , then the UE respond with a Measurement Report containing UE location.

17.2.2.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - ~~the UE shall be in a state where no assistance data is stored in the UE.~~
  - the UE is in MM-state "MM idle, no IMSI", no USIM inserted.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Based Network Assisted GPS
- ~~Method of clearing stored GPS assistance data~~

Test procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages. The assistance data includes navigation models for the satellites including a number of non-existing satellites. The last MEASUREMENT CONTROL message orders periodical reporting by sending a MEASUREMENT CONTROL message requesting periodical measurement reporting (1 report, interval 64s).

The UE then performs positioning measurements, calculates "UE Positioning Position Estimate Info" and responds with this in the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. One of the following emergency numbers shall be used: 000, 08, 112, 110, 118, 119, 911 or 999.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE based positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		CM SERVICE ACCEPT	
5	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
6	<--		CALL PROCEEDING	
7	<--		ALERTING	
8	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
9	<--		CONNECT	
10	-->		CONNECT ACKNOWLEDGE	
11	UE			The DTCH is through connected in both directions.
12	<-		MEASUREMENT CONTROL	
13	<-		MEASUREMENT CONTROL	
14	<-		MEASUREMENT CONTROL	
15	-->		MEASUREMENT REPORT	
16	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 12):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 13):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 15):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	GPS reference time only
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

NEXT CHANGED SECTION

17.2.3.2.3 Test Purpose

To verify the UE behaviour at a mobile originated location request procedure using network-assisted UE-based GPS.

17.2.3.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - ~~The UE shall begin the test with no GPS assistance data stored.~~
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- ~~Method of clearing stored GPS assistance data~~
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “locationEstimate”. The SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages, including assistance data. The UE then initiates periodic measurement reporting. After the first received MEASUREMENT REPORT message, the SS responds with a FACILITY message containing an MO-LR result. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type "locationEstimate".
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
9	<-		MEASUREMENT CONTROL	
10	->		MEASUREMENT REPORT	
11	<-		FACILITY	LCS MO-LR result message containing location estimate
12	->		RELEASE COMPLETE	The UE terminates the dialogue

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate
SS version indicator	Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 9):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 10)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

FACILITY (Step 11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.2.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate".

After step 9, the UE shall respond with a MEASUREMENT REPORT message.

After step 11, the UE shall send a RELEASE COMPLETE message.

17.2.3.3 LCS Mobile originated location request/ UE-Based or UE-Assisted GPS/ Assistance data request/ Success

17.2.3.3.1 Definition

This test case applies to all UEs supporting UE-Based or UE-Assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for assistance data.

17.2.3.3.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

3) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

Reference(s):

- Conformance requirements 1, 2 and 3: TS 24.030, subclause 5.1.1

17.2.3.3.3 Test Purpose

To verify the UE behaviour at a mobile originated location request procedure using network-assisted network assisted GPS.

17.2.3.3.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- UE Assisted Network Assisted GPS
- Method of clearing stored GPS assistance data
- Method of triggering an MO-LR request for assistance data.

Test Procedure

The stored GPS assistance data in the UE shall be cleared.

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “assistanceData”.

The SS transmits an ASSISTANCE DATA delivery message with assistance data. When the assistance data delivery was successful, the SS sends a FACILITY message to the UE.

The UE clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Clear stored GPS assistance data
~~1~~2	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
~~2~~3	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
~~3~~4	<-		AUTHENTICATION REQUEST	
~~4~~5	->		AUTHENTICATION RESPONSE	
~~5~~6		SS		The SS starts ciphering and integrity protection.
~~6~~7	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type "assistanceData".
~~7~~8	<-		ASSISTANCE DATA DELIVERY	~~Assistance data as requested by the UE in step 6.~~The SS provides the requested data in one or more ASSISTANCE DATA DELIVERY messages as specified in section 17.2.1.3.5
~~8~~	~~<-~~		~~ASSISTANCE DATA DELIVERY~~	~~Number of ASSISTANCE DATA DELIVERY~~
~~9~~	~~<-~~		~~ASSISTANCE DATA DELIVERY~~	~~Messages may depend on UE request in step 6.~~
~~10~~9	<-		FACILITY	
~~11~~10	->		RELEASE COMPLETE	The UE terminates the dialogue
~~12~~11		SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step ~~6~~7)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->assistanceData locationMethod -> assistedGPS gpsAssistanceData -> OCTET STRING Octets 1 to 38 are coded in the same way as octets 3 to 7+2n of Requested GPS Data IE in 3GPP TS 49.031
SS version indicator	Value 1 or above

~~ASSISTANCE DATA DELIVERY (Step 7):~~

~~Information element~~	~~Value/remark~~
~~Measurement Information Elements~~	
~~UE positioning OTDOA assistance data for UE-based~~	~~Not present~~

~~UE positioning GPS assistance dataSet as requested by the UE in step 6.~~

ASSISTANCE DATA DELIVERY (Step 8):

Information element	Value/remark
Measurement Information Elements	
UE positioning OTDOA assistance data for UE-based	Not present
UE positioning GPS assistance data	Set as ~~requested by the UE in step 6~~specified in 17.2.1.3.5.

~~ASSISTANCE DATA DELIVERY (Step 9):~~

~~Information element~~	~~Value/remark~~
~~**Measurement Information Elements**~~	
~~UE positioning OTDOA assistance data for UE-based~~	~~Not present~~
~~UE positioning GPS assistance data~~	~~Set as requested by the UE in step 6.~~

FACILITY (Step ~~10~~9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step ~~11~~10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.3.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "assistanceData".

After step ~~10~~8, the UE shall send a RELEASE COMPLETE message.

NEXT CHANGED SECTION

17.2.3.6.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.

- Satellites: As specified in 17.2.1.2

- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type “locationEstimate”. The IE “LCSClientExternalID” is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages, including assistance data.

The UE sends a MEASUREMENT REPORT message containing a location estimate.

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service”
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE “MOLR-Type” is set to “locationEstimate”. The IE “LCSClientExternalID” is set to a valid ID for an external LCS client.
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
9	<-		MEASUREMENT CONTROL	

10	->	MEASUREMENT REPORT	
11	<-	FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
12	->	RELEASE COMPLETE	The UE terminates the dialogue
13	SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString
SS version indicator	Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 9):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 10)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

FACILITY (Step 11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

NEXT CHANGED SECTION

17.2.3.8.3 Test Purpose

To verify the UE behaviour at a mobile originated location request for GPS assistance data where the network is unable to provide the requested GPS assistance data.

17.2.3.8.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS, or UE Assisted Network Assisted GPS
- Method of triggering an MO-LR request for assistance data.
- Method of clearing stored GPS assistance data

Test Procedure

The stored GPS assistance data in the UE shall be cleared.

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes an MO-LR request of type “assistanceData”.

The SS is unable to provide the requested assistance data.

The SS sends a RELEASE COMPLETE message containing a return error component.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Clear stored GPS assistance data
~~1~~2	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
~~2~~3	->		CM SERVICE REQUEST	The CM service type IE indicates “call independent supplementary service”
~~3~~4	<-		AUTHENTICATION REQUEST	
~~4~~5	->		AUTHENTICATION RESPONSE	
~~5~~6	SS			The SS starts ciphering and integrity protection.
~~6~~7	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type “assistanceData”.
~~7~~8	SS			SS is unable to provide the requested assistance data
~~8~~9	<-		RELEASE COMPLETE	SS terminates the dialogue containing a return error component
~~9~~10	SS			The SS waits for 10 seconds to verify that the UE does not send a RELEASE COMPLETE message.
~~10~~11	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step ~~6~~7)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->assistanceData locationMethod -> assistedGPS gpsAssistanceData -> OCTET STRING Octets 1 to 38 are coded in the same way as octets 3 to 7+2n of Requested GPS Data IE in 3GPP TS 49.031
SS version indicator	Value 1 or above

RELEASE COMPLETE (Step ~~8~~9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return error = LCS-MOLR Error -> positionMethodFailure

17.2.3.8.5 Test requirements

After step ~~5~~ 6 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "assistanceData".

During step ~~9~~ 10 the UE shall not send any RELEASE COMPLETE message.

NEXT CHANGED SECTION

17.2.3.9.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellite Simulator is switched off
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state "PMM idle" with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “locationEstimate”. The SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages, including assistance data.

The UE sends a MEASUREMENT REPORT message reporting a positioning error for not enough satellite signals received.

The SS sends a RELEASE COMPLETE message containing a return error component.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service”
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with a LCS MO-LR request of type “locationEstimate”.
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
9	<-		MEASUREMENT CONTROL	
10	->		MEASUREMENT REPORT	Positioning error report “not enough GPS satellites”
11	SS			SS is unable to fulfil the MO-LR request
12	<-		RELEASE COMPLETE	SS terminates the dialogue containing a return error component

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 9):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

NEXT CHANGED SECTION

17.2.4.1.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Based Network Assisted GPS

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages. The assistance data includes navigation models for the satellites including a number of non-existing satellites. The last MEASUREMENT CONTROL message orders periodical reporting.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including a location estimate.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<-		MEASUREMENT CONTROL	
5	<-		MEASUREMENT CONTROL	
6	<-		MEASUREMENT CONTROL	Periodical reporting is configured.
7	->		MEASUREMENT REPORT	

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingString nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.1.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step 6 the UE shall respond with a MEASUREMENT REPORT message.

17.2.4.2 LCS Mobile-terminated location request/UE-Based GPS/ Request ~~of~~ for additional assistance data/ Success

17.2.4.2.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.2.2 Conformance requirements

1) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

   - if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

   - if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

   5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

   5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

2) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4.

3) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

4) If the IE "UE positioning GPS reference time" is included, the UE shall:

1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

- store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

- if the IE "SFN" and IE "UTRAN GPS timing of cell frames" are included:
  - if the UE is able to utilise the IEs:
    - store these IEs in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - if the UE is not in CELL_DCH state:
        - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the serving cell.
      - if the UE is in CELL_DCH state:
        - ignore IEs "SFN" and "UTRAN GPS timing of cell frames".
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
      - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
      - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
- if the IE "SFN-TOW Uncertainty" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it to determine if the relationship between GPS time and air-interface timing of the NODE B transmission is known to within at least 10ms.
- if the IE "$T_{UTRAN-GPS}$ drift rate" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA; and
  - may use it as an estimate of the drift rate of the NODE B clock relative to GPS time.
- if the IE "GPS TOW Assist" is included:
  - for each satellite:

3> delete all information currently stored in the IE "GPS TOW Assist" in the IE "UE positioning GPS reference time" in the variable UE_POSITIONING_GPS_DATA;

3> store the received GPS TOW Assist information in the IE “UE positioning GPS reference time” in the variable UE_POSITIONING_GPS_DATA.

5) If the IE “UE positioning GPS reference UE position” is included, the UE shall:

1> store this IE in the IE “UE positioning GPS reference UE position” in variable UE_POSITIONING_GPS_DATA; and

1> use it as a priori knowledge of the approximate location of the UE.

6) If IE “UE positioning GPS ionospheric model” is included, the UE shall:

1> store this IE in the IE “UE positioning GPS ionospheric model” in variable UE_POSITIONING_GPS_DATA;

1> act on these GPS ionospheric model parameters in a manner similar to that specified in [12].

7) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

- include IE “UE positioning Position Estimate Info” in the MEASUREMENT REPORT and set the contents of the IE as follows:
  - if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or
  - if the IE “GPS timing of Cell wanted” is set to FALSE:
    - include the IE “GPS TOW msec”.
  - if IE “Vertical Accuracy” has been included in IE “UE positioning reporting quantity”:
    - if the IE “Vertical Accuracy” has been assigned to a value unequal to “0”:
      - if the UE has been able to calculate a 3-dimensional position:
        - include IE “Ellipsoid point with altitude and uncertainty ellipsoid” as the position estimate.
      - if the UE has not been able to calculate a 3-dimensional position:
        - act as if IE “Vertical Accuracy” has not been included in IE “UE positioning reporting quantity”.
  - if IE “Vertical Accuracy” has not been included in IE “UE positioning reporting quantity”:
  - if IE “Horizontal Accuracy” in IE “UE positioning reporting quantity” has been assigned to a value unequal to 0:

6> include either IE “Ellipsoid point with uncertainty circle” or IE “Ellipsoid point with uncertainty ellipse” or IE “Ellipsoid point with altitude and uncertainty ellipsoid” as the position estimate.

8) The UE shall set the contents of the IE "UE positioning Error" as follows:

…

1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":

2> if there were not enough GPS satellites to be received:

3> set IE "Error reason" to "Not Enough GPS Satellites".

2> if some GPS assistance data was missing:

3> set IE "Error reason" to "Assistance Data Missing"; and

3> if the IE ""Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT_IDENTITY is set to TRUE:

4> include the IE "GPS Additional Assistance Data Request".

Reference(s):

- Conformance requirement 1: TS 25.331, subclause 8.4.1.3.
- Conformance requirement 2: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.5.
- Conformance requirement 7: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 8: TS 25.331, clause 8.6.7.19.5.
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.4.2.3 Test Purpose

To verify the UE’s behavior in a mobile-terminated location request procedure using UE-based A-GPS with assistance data from the network.

To verify that the UE in CELL_DCH state accepts assistance data received in multiple MEASUREMENT CONTROL messages.

To verify that the UE includes the IE “GPS Additional Assistance Data Request” to request assistance data when it does not have enough assistance data to compute a position.

17.2.4.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:

- The UE shall begin the test with no GPS assistance data stored.
- The UE is in state "MM idle" with valid TMSI and CKSN.
- The UE is in state “PMM idle” with valid P-TMSI
- The UE is in CELL_DCH state.

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data

Test Procedure

The stored GPS assistance data in the UE shall be cleared.

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL including no assistance data.

The UE sends a MEASUREMENT REPORT message to report a positioning error, requesting further assistance data. The SS response with ~~a~~ one or more MEASUREMENT CONTROL message~~s~~ that ~~includes~~ include the requested assistance data ~~for four satellites~~ and instructs the UE not to repeat the request for assistance data. ~~Two supplementary~~The final MEASUREMENT CONTROL message~~s~~ ~~provide assistance data for four additional satellites each, and the last message~~ orders periodic reporting.

The UE performs positioning measurements and responds with a MEASUREMENT REPORT message containing a valid position estimate in the IE “UE Positioning Position Estimate Info”.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Clear stored GPS assistance data
~~1~~2	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
~~2~~3	UE			The UE displays information about LCS client
~~3~~4	->		RELEASE COMPLETE	The UE terminates the dialogue
~~4~~5	<--		MEASUREMENT CONTROL	No assistance data, and “Additional Assistance Data Request” IE set to TRUE.
~~5~~6	-->		MEASUREMENT REPORT	Positioning error report with request for further assistance data.
~~6~~	~~<--~~		~~MEASUREMENT CONTROL~~	
~~7~~	~~<--~~		~~MEASUREMENT CONTROL~~	
~~8~~7	<--		MEASUREMENT CONTROL	The SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5. The final MEASUREMENT CONTROL message contains: Reporting mode: Periodical reporting Amount of reporting: 1 Reporting interval: 64000
~~9~~8	-->		MEASUREMENT REPORT	Measurement report message containing UE position estimate.

Specific Message Contents

REGISTER (Step ~~1~~2)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~3~~4)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step ~~4~~5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Inadequate assistance data for UE-based A-GPS” in 17.2.1.3.2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~5~~6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked

Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	No reporting
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	No reporting
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~8~~7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Set as required according to position in sequence of messages~~Periodical reporting criteria~~
- Amount of reporting	Set as required according to position in sequence of messages~~1~~
- Reporting interval	Set as required according to position in sequence of messages~~64000~~
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified ~~for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2~~in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~9~~8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.2.5 Test Requirements

At step ~~5~~ 6 the UE shall send a MEASUREMENT REPORT message containing the IE "UE positioning error", with "Error reason" set to "Assistance Data Missing".

At step ~~9~~ 8 the UE shall send a MEASUREMENT REPORT message containing a valid UE position estimate.

NEXT CHANGED SECTION

17.2.4.3.3 Test Purpose

To verify the UE's behavior in a mobile-terminated location request procedure using UE-based A-GPS with assistance data from the network.

To verify that the UE in CELL_DCH state accepts assistance data received in multiple MEASUREMENT CONTROL messages.

To verify that the UE sets the IE Error Reason in 'UE Postioning Error' to 'Not Enough GPS Satellites' when it does not receive enough satellite signals to compute a position.

17.2.4.3.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellite Simulator is switched off.
- User Equipment:

~~The UE shall begin the test with no GPS assistance data stored.~~

- The UE is in state "MM idle" with valid TMSI and CKSN.
- The UE is in state “PMM idle” with valid P-TMSI
- The UE is in CELL_DCH state.

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- ~~Method of clearing stored GPS assistance data~~

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using three MEASUREMENT CONTROL messages. The assistance data includes navigation models for the satellites including a number of non-existing satellites. The last MEASUREMENT CONTROL message orders periodical reporting.

The UE sends a MEASUREMENT REPORT message reporting a positioning error for not enough satellite signal.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3		->	RELEASE COMPLETE	The UE terminates the dialogue
4 5 6 7		<-- <-- <--<br-->	MEASUREMENT CONTROL MEASUREMENT CONTROL MEASUREMENT CONTROL MEASUREMENT REPORT	 Periodical reporting is configured Positioning error report ‘not enough GPS satellites’

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)
Facility	Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)

- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	

- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Not Enough GPS Satellites
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

NEXT CHANGED SECTION

17.2.4.5.3 Test Purpose

To verify the UE behaviour in the mobile-terminated location request procedure using network-assisted UE-assisted GPS to deliver UE positioning measurements to the network.

To verify that the UE includes the IE “GPS Additional Assistance Data Request” to request additional assistance data when it does not have enough assistance data to perform the requested measurements.

17.2.4.5.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

- The UE shall begin the test with no GPS assistance data stored.
- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Assisted Network Assisted GPS
- Method of clearing stored GPS assistance data

Test Procedure

The stored GPS assistance data in the UE shall be cleared.

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message. The assistance data is as described in section 17.2.1.3.2 (Inadequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including a request for additional assistance data. The SS responds with ~~a~~ one or more MEASUREMENT CONTROL messages containing assistance data as specified in section 17.2.1.3.~~3~~ 5 (Response to additional~~Adequate~~ assistance data requests from~~for~~ UE~~ assisted A-GPS~~). The UE sends a MEASUREMENT REPORT message including the IE "UE positioning GPS measured results".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Clear stored GPS assistance data
~~1~~2	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
~~2~~3	UE			The UE displays information about LCS client
~~3~~4	->		RELEASE COMPLETE	The UE terminates the dialogue
~~4~~5	<-		MEASUREMENT CONTROL	Periodical reporting is configured. Assistance data set as specified in section 17.2.1.3.2 (Inadequate assistance data for UE-assisted A-GPS).
~~5~~6	->		MEASUREMENT REPORT	UE requests additional assistance data.
~~6~~7	<-		MEASUREMENT CONTROL	~~Assistance data set as requested by the UE in step 5.~~The SS provides the requested data in one or more MEASUREMENT CONTROL messages as defined in section 17.2.1.3.5
~~7~~8	->		MEASUREMENT REPORT	UE sends the IE "UE positioning GPS measured results".

Specific Message Contents

REGISTER (Step ~~1~~2)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~3~~4)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step ~~4~~5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Inadequate assistance data for UE-assisted A-GPS” in 17.2.1.3.2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~5~~6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Present, if requested by UE
- UTC model	Present, if requested by UE
- Ionospheric model	Present, if requested by UE
- Navigation model	Present, if requested by UE
- DGPS corrections	Present, if requested by UE
- Reference location	Present, if requested by UE
- Reference time	Present, if requested by UE
- Acquisition assistance	Present, if requested by UE
- Real-time integrity	Present, if requested by UE
- Navigation model additional data	Present, if requested by UE
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step ~~6~~7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as ~~requested by the UE in step 5.~~specified in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~7~~8)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.5.5 Test requirements

After step ~~2~~ 3 the UE shall send a RELEASE COMPLETE message.

After step ~~4~~ 5 the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning error", with "Error reason" set to "Assistance data missing".

After step ~~6~~ 7 the UE shall send a MEASUREMENT REPORT message containing the IE "UE positioning GPS measured results".

NEXT CHANGED SECTION

17.2.4.6.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including a location estimate.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user ignores the location request by taking no action.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE then sends a MEASUREMENT REPORT message including a location estimate.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
9	->		MEASUREMENT REPORT	
10	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
11	SS			SS starts timer T(LCSN) set to 20 seconds
12	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
13	UE			The user denies the location request within < 20 seconds
14	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
15	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
16	SS			SS starts timer T(LCSN) set to 20 seconds
17	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
18	UE			The user does not reply
19	SS			SS waits for 20 seconds (until T(LCSN) expires) to ensure that the UE does not send a RELEASE COMPLETE message.
20	<-		RELEASE COMPLETE	SS terminates the dialogue
21	<-		MEASUREMENT CONTROL	
22	<-		MEASUREMENT CONTROL	
23	<-		MEASUREMENT CONTROL	
24	->		MEASUREMENT REPORT	
25	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 9)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

REGISTER (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 14)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step 15)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 20)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

MEASUREMENT CONTROL (Step 21):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 22):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 23):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

NEXT CHANGED SECTION

17.2.4.7.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be not allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including a location estimate.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationNotAllowed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
9	->		MEASUREMENT REPORT	
10	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
11	SS			SS starts timer T(LCSN) set to 20 seconds
12	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
13	UE			The user denies the location request within < 20 seconds
14	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
15	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
16	SS			SS starts timer T(LCSN) set to 20 seconds
17	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
18	UE			The user does not reply
19	SS			SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
20	<-		RELEASE COMPLETE	SS terminates the dialogue
21	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the third MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3.1
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

NEXT CHANGED SECTION

17.2.4.10.3 Test Purpose

To verify that the UE sends a MEASUREMENT CONTROL FAILURE message, after receiving a MEASUREMENT CONTROL message with IE "Method Type" set a value which is inconsistent with the UE positioning capabilities.

To verify that the UE set the "failure cause" IE to value "configuration incomplete" in the uplink MEASUREMENT CONTROL FAILURE message.

17.2.4.10.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke component set to notifyLocationAllowed.

The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result.

The SS sends a MEASUREMENT CONTROL message with "Method type" set to a value not supported by the UE as indicated in the "UE positioning capability" contained in the "UE radio access capability".

The UE sends a MEASUREMENT CONTROL FAILURE message with Failure Cause "Configuration Incomplete".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE notifies the user of the location request
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	SS			SS verifies that UE does not support both UE-based and UE-assisted GPS
5	<-		MEASUREMENT CONTROL	IE "Method type" is set to a method not supported by the UE Assistance data set as indicated for "Adequate assistance data for UE-assisted A-GPS" in section 17.2.1.3.3 (for UE-assisted), or as indicated for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in section 17.2.1.3.1 (for UE-based)
6	->		MEASUREMENT CONTROL FAILURE	Failure cause "Configuration Incomplete"
7	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	Set to a method not supported by the UE
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	If “Method type” is set to “UE-based”: Set as specified for the first MEASUREMENT REPORT message in “Adequate assistance data for UE-based A-GPS” in 17.2.1.3.1 If “Method type” is set to “UE-assisted”: Set as specified in “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL FAILURE (Step 6)

Information Element	Value/remark
RRC transaction identifier	Set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 5
Failure cause	Configuration incomplete

17.2.4.10.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step 5, the UE shall transmit MEASUREMENT CONTROL FAILURE message, stating the IE "failure cause" as "configuration incomplete". The UE shall not transmit any MEASUREMENT REPORT messages during the execution of this test case.

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1044** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Addition of GPS scenario and A-GPS assistance data values
Source:	⌘	Spirent Communications
Work item code:	⌘	TEI
Date:	⌘	20/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	There is no definition of the GPS scenario or A-GPS assistance data values to be used. Use of one field is "FFS". Other missing information on values of fields. Editorial and formatting errors corrected
Summary of change:	⌘	- Reference to GPS scenario and assistance data values defined in new section 10.7 of 34.108 added. - Reference to 12 satellites and their Navigation data removed as unnecessary in signalling tests and very difficult and unnecessarily expensive to implement in SS. Also references to data for non-existent satellites. - GPS TOW assist field changed to Not Present as unnecessary for signalling tests - Now unecessary third MEASUREMENT CONTROL message removed throughout. - Additional assistance data requests from UE assisted handsets clarified - Horizontal and vertical accuracies specified - Value of locationEstimate field in FACILITY message clarified - Various clarifications and editorial changes made and formatting of some tables and PIXIT statements corrected -
Consequences if not approved:	⌘	Different implementations may use varying GPS scenarios and assistance data sets with inconsistent results. Fields remain "FFS" and unspecified. Editorial and formatting errors remain

Clauses affected:	⌘	17.2.1.2, 17.2.1.3, 17.2.1.3.1, 17.2.1.3.3, 17.2.1.3.5, 17.2.2.X.4, 17.2.2.1.5, 17.2.2.2.5, 17.2.3.X.4, 17.2.3.2.5, 17.2.3.6.5, 17.2.3.7.5, 17.2.3.9.5, 17.2.4.X.4, 17.2.4.1.5, 17.2.4.2.5, 17.2.4.3.5, 17.2.4.6.5, 17.2.4.7.5			
Other specs affected:	⌘	**Y** / **N**		⌘	
			X Other core specifications		
			X Test specifications		
			X O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.2 Location Services

This subclause contains test cases for Location Services (LCS).

17.2.1 Default conditions during LCS tests

17.2.1.1 Default system information

Default system information, as specified in TS 34.108 subclause 6.1, is broadcasted. SIB15/SIB15.x are not broadcasted unless otherwise stated in the specific test cases.

17.2.1.2 Simulated A-GPS environment

During A-GPS tests ~~in clause 17.2,~~ the SS ~~default conditions of the test setup~~ shall~~, at a minimum,~~ generate satellite signals that are of a sufficient number and strength not to prevent the UE from responding to a positioning request with a valid measurement response. Any assistance data provided during these tests shall be consistent with the satellite signals generated during these tests.

It is considered that six satellite signals with the level of the simulated satellites all at -125dBm +/- 6dB should be suitable, however this does not imply any conformance requirements on the UE.

A suitable GPS scenario together with associated assistance data is defined in TS 34.108 clause 10.7.

The accuracy of the GPS time-of-week in the provided assistance data shall be within +/- 2 s relative to the GPS time in the system simulator.

17.2.1.3 A-GPS assistance data sets

This section defines the assistance data sets supplied by the ~~network~~ SS in A-GPS test cases.

Throughout this section, “adequate assistance data” means the assistance data used in test cases where it is expected that a UE supporting A-GPS will be able to perform the requested positioning operation using the supplied assistance data, and “inadequate assistance data” is the assistance data used in test cases that expect that the UE will be unable to perform the requested operation. The values of all the fields in all cases are defined in TS 34.108 clause 10.7.

17.2.1.3.1 Adequate assistance data for UE-based A-GPS

For UE-based test cases requiring adequate assistance data, the IE “UE positioning GPS assistance data” is spread across ~~three~~two separate MEASUREMENT CONTROL messages, and set as follows:

~~NOTE: If the SS generates signals from less than 12 satellites, it shall still provide 12 items of navigation model information, including information for fictive satellites whose signals are not generated by the SS and thus are impossible for the UE to receive. Moreover, the navigation model information for the satellites generated by the SS shall be distributed equally among the transmitted MEASUREMENT CONTROL messages.~~

First MEASUREMENT CONTROL MESSAGE:

- UE positioning GPS assistance data	
- UE positioning GPS reference time	
- GPS week	Set according to 17.2.1.2
- GPS TOW msec	Set according to 17.2.1.2
- UTRAN GPS reference time	Not present
- SFN-TOW uncertainty	Not present
- $T_{UTRAN-GPS}$ drift rate	Not present
- GPS TOW assist	~~Set according to 17.2.1.2 (FFS)~~Not present
- UE positioning GPS reference UE position	Set according to 17.2.1.2
- UE positioning GPS DGPS corrections	Not present
- UE positioning GPS navigation model	
- Satellite information	For satellites 1-3~~4~~
- SatID	Set according to 17.2.1.2
- Satellite status	NS NN
- GPS ephemeris and clock corr. param.	Set according to 17.2.1.2
- UE positioning GPS ionospheric model	Set according to 17.2.1.2
- UE positioning GPS UTC model	Not present
- UE positioning GPS almanac	Not present
- UE positioning GPS acquisition assistance	Not present
- UE positioning GPS real-time integrity	Not present

Second MEASUREMENT CONTROL message:

- UE positioning GPS assistance data	
- UE positioning GPS reference time	Not present
- UE positioning GPS reference UE position	Not present
- UE positioning GPS DGPS corrections	Not present
- UE positioning GPS navigation model	
- Satellite information	For satellites ~~5-8~~3-6
- SatID	Set according to 17.2.1.2
- Satellite status	NS NN
- GPS ephemeris and clock corr. param.	Set according to 17.2.1.2
- UE positioning GPS ionospheric model	Not present
- UE positioning GPS UTC model	Not present
- UE positioning GPS almanac	Not present
- UE positioning GPS acquisition assistance	Not present
- UE positioning GPS real-time integrity	Not present

~~Third MEASUREMENT CONTROL message:~~

~~- UE positioning GPS assistance data~~	
~~- UE positioning GPS reference time~~	~~Not present~~
~~- UE positioning GPS reference UE position~~	~~Not present~~
~~- UE positioning GPS DGPS corrections~~	~~Not present~~
~~- UE positioning GPS navigation model~~	
~~- Satellite information~~	~~For satellites 9-12~~
~~- SatID~~	~~Set according to 17.2.1.2~~
~~- Satellite status~~	~~NS NN~~
~~- GPS ephemeris and clock corr. param.~~	~~Set according to 17.2.1.2~~
~~- UE positioning GPS ionospheric model~~	~~Not present~~
~~- UE positioning GPS UTC model~~	~~Not present~~
~~- UE positioning GPS almanac~~	~~Not present~~
~~- UE positioning GPS acquisition assistance~~	~~Not present~~
~~- UE positioning GPS real-time integrity~~	~~Not present~~

17.2.1.3.2 Inadequate assistance data for UE-based A-GPS

For UE-based test cases requiring inadequate assistance data, the IE "UE positioning GPS assistance data" is set to "Not present" in the MEASUREMENT CONTROL message.

17.2.1.3.3 Adequate assistance data for UE-assisted A-GPS

For UE-assisted test cases requiring adequate assistance data, the IE "UE positioning GPS assistance data" is set as follows for the first MEASUREMENT CONTROL message:

- UE positioning GPS assistance data	
- UE positioning GPS reference time	
- GPS week	Set according to 17.2.1.2
- GPS TOW msec	Set according to 17.2.1.2
- UTRAN GPS reference time	Not present
- SFN-TOW uncertainty	Not present
- $T_{UTRAN-GPS}$ drift rate	Not present
- GPS TOW assist	~~Set according to 17.2.1.2 (FFS)~~Not present
- UE positioning GPS reference UE position	Not present
- UE positioning GPS DGPS corrections	Not present
- UE positioning GPS navigation model	Not present
- UE positioning GPS ionospheric model	Not present
- UE positioning GPS UTC model	Not present
- UE positioning GPS almanac	Not present
- UE positioning GPS acquisition assistance	
- GPS TOW msec	Set according to 17.2.1.2
- UTRAN GPS reference time	Not present
- Satellite information	Set according to 17.2.1.2
- UE positioning GPS real-time integrity	Not present

If the UE requests further assistance data, the SS sends subsequent MEASUREMENT CONTROL messages containing the assistance data fields requested by the UE that are available in the SS as specified in TS 34.108 clause 10.7 and in clause 17.2.1.3.5..

17.2.1.3.4 Inadequate assistance data for UE-assisted A-GPS

For UE-assisted test cases requiring inadequate assistance data, the IE "UE positioning GPS assistance data" is set to "Not present" in the MEASUREMENT CONTROL message.

17.2.1.3.5 Response to additional assistance data requests from UE

If the SS needs to send assistance data in response to a request for additional assistance data from the UE, the IE "UE positioning GPS assistance data" is set as follows:

- UE positioning GPS assistance data	
- UE positioning GPS reference time	Set according to 17.2.1.2 if requested by the UE
- GPS week	Set according to 17.2.1.2
- GPS TOW msec	Set according to 17.2.1.2
- UTRAN GPS reference time	Not present
- SFN-TOW uncertainty	Not present
- $T_{UTRAN-GPS}$ drift rate	Not present
- GPS TOW assist	Not present
- UE positioning GPS reference UE position	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS DGPS corrections	~~Set according to 17.2.1.2 if requested by the UE~~Not sent
- UE positioning GPS navigation model	Set according to 17.2.1.2 if requested by the UE
- Satellite information	For satellites 1-6 (Note)
- SatID	Set according to 17.2.1.2
- Satellite status	NS NN
- GPS ephemeris and clock corr. param.	Set according to 17.2.1.2
- UE positioning GPS ionospheric model	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS UTC model	~~Set according to 17.2.1.2 if requested by the UE~~Not sent
- UE positioning GPS almanac	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS acquisition assistance	Set according to 17.2.1.2 if requested by the UE
- GPS TOW msec	Set according to 17.2.1.2
- UTRAN GPS reference time	Not present
- Satellite information	Set according to 17.2.1.2
- UE positioning GPS real-time integrity	~~Set according to 17.2.1.2 if requested by the UE~~Not sent

Note: The SS provides navigation-model information for at most ~~four~~ three satellites in any one MEASUREMENT CONTROL message; additional satellites are ~~spread across~~sent in the subsequent MEASUREMENT CONTROL message~~s~~.

17.2.2 Assisted GPS Network Induced Tests

17.2.2.1 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / with USIM

17.2.2.1.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.2.1.2 Conformance requirements

1) A MM connection for an emergency call may be established in all states of the mobility management sublayer which allow MM connection establishment for a normal originating call.

When a user requests an emergency call establishment the UE will send a CM SERVICE REQUEST message to the network with a CM service type information element indicating emergency call establishment.

2) Having entered the "MM connection pending" state, upon MM connection establishment, the call control entity of the UE sends a setup message to its peer entity. This setup message is

   - a SETUP message, if the call to be established is a basic call; and
   - an EMERGENCY SETUP message, if the call to be established is an emergency call.

3) If the IE "UE positioning GPS reference time" is included, the UE shall:

   1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

   1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

   NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

4) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

   1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

   1> use it as a priori knowledge of the approximate location of the UE.

5) The UE shall when a measurement report is triggered:

   2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

      3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

         4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

         4> if the IE "GPS timing of Cell wanted" is set to FALSE:

            5> include the IE "GPS TOW msec".

         4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

            5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

               6> if the UE has been able to calculate a 3-dimensional position:

                  7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

               6> if the UE has not been able to calculate a 3-dimensional position:

                  7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

Reference(s):

- Conformance requirement 1: TS 24.008 clause 4.5.1.5.
- Conformance requirement 2: TS 24.008, clause 5.2.1.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.1b.

17.2.2.1.3 Test Purpose

To verify when an emergency call is initiated by a UE with a USIM, and the network performs a location request using the RRC measurement control procedure by sending Measurement Control message , then the UE respond with a Measurement Report containing UE location.

17.2.2.1.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - the UE shall be in a state where no assistance data is stored in the UE.
  - the UE is in state "MM idle" with valid TMSI and CKSN.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data

Test procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using ~~three~~ two MEASUREMENT CONTROL messages. ~~The assistance data includes~~

~~navigation models for the satellites including a number of non-existing satellites.~~ The last MEASUREMENT CONTROL message orders periodical reporting by sending a MEASUREMENT CONTROL message requesting periodical measurement reporting (1 report, interval 64s).

The UE then performs positioning measurements, calculates "UE Positioning Position Estimate Info" and responds with this in the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. Number shall be one programmed in test USIM EF_{ECC} (Emergency Call Codes), ref. 34.108 clause 8.3.2.21.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE based positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		AUTHENTICATION REQUEST	IE Authentication Parameter AUTN shall be present in the message.
5	-->		AUTHENTICATION RESPONSE	SRES specifies correct value.
6				SS starts security procedure.
7	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
8	<--		CALL PROCEEDING	
9	<--		ALERTING	
10	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
11	<--		CONNECT	
12	-->		CONNECT ACKNOWLEDGE	
13	UE			The DTCH is through connected in both directions.
14	<-		MEASUREMENT CONTROL	
15	<-		MEASUREMENT CONTROL	
~~16~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~17~~16	-->		MEASUREMENT REPORT	
~~18~~17	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for “Adequate assistance data for UE-based A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 15):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~16~~15):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~17~~16):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	GPS reference time only
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.2.1.5 Test requirements

After step 12 the UE shall have through connected the DTCH in both directions.

After step ~~16~~ 15 the UE shall respond with a MEASUREMENT REPORT message.

17.2.2.2 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / without USIM

17.2.2.2.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.2.2.2 Conformance requirements

1) A MM connection for an emergency call may be established in all states of the mobility management sublayer which allow MM connection establishment for a normal originating call.

   When a user requests an emergency call establishment the UE will send a CM SERVICE REQUEST message to the network with a CM service type information element indicating emergency call establishment.

   Normally, the UE will be identified by an IMSI or a TMSI. However, if none of these identifiers is available in the UE, then the UE shall use the IMEI for identification purposes.

2) As a serving network option, emergency calls may be established without the network having to apply the security mode procedure as defined in TS 24.008.

   The following are the only cases where the "security procedure not applied" option may be used:

   a) Authentication is impossible because the USIM is absent.

3) Having entered the "MM connection pending" state, upon MM connection establishment, the call control entity of the UE sends a setup message to its peer entity. This setup message is

   - a SETUP message, if the call to be established is a basic call; and
   - an EMERGENCY SETUP message, if the call to be established is an emergency call.

4) If the IE "UE positioning GPS reference time" is included, the UE shall:

   1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

   1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

   NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

5) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

   1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

   1> use it as a priori knowledge of the approximate location of the UE.

6) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

4> if the IE "GPS timing of Cell wanted" is set to FALSE:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

Reference(s):

- Conformance requirement 1: TS 24.008 clause 4.5.1.5, TS 22.101 clause 8.
- Conformance requirement 2: TS 33.102, clause 6.4.9.2.
- Conformance requirement 3: TS 24.008, clause 5.2.1.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.1b.

17.2.2.2.3 Test Purpose

To verify when an emergency call is initiated by a UE in the "MM idle, no IMSI" state (no USIM inserted) and the network performs a location request using the RRC measurement control procedure by sending Measurement Control message , then the UE respond with a Measurement Report containing UE location.

17.2.2.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - the UE shall be in a state where no assistance data is stored in the UE.
  - the UE is in MM-state "MM idle, no IMSI", no USIM inserted.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data

Test procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using ~~three~~two MEASUREMENT CONTROL messages. ~~The assistance data includes navigation models for the satellites including a number of non existing satellites.~~ The last MEASUREMENT CONTROL message orders periodical reporting by sending a MEASUREMENT CONTROL message requesting periodical measurement reporting (1 report, interval 64s).

The UE then performs positioning measurements, calculates "UE Positioning Position Estimate Info" and responds with this in the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. One of the following emergency numbers shall be used: 000, 08, 112, 110, 118, 119, 911 or 999.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE based positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		CM SERVICE ACCEPT	
5	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
6	<--		CALL PROCEEDING	
7	<--		ALERTING	
8	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
9	<--		CONNECT	
10	-->		CONNECT ACKNOWLEDGE	
11	UE			The DTCH is through connected in both directions.
12	<-		MEASUREMENT CONTROL	
13	<-		MEASUREMENT CONTROL	
~~14~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~15~~14	-->		MEASUREMENT REPORT	
~~16~~15	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 12):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 13):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~14~~13):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~15~~14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	GPS reference time only
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.2.2.5 Test requirements

After step 10 the UE shall have through connected the DTCH in both directions.

After step ~~14~~ 13 the UE shall respond with a MEASUREMENT REPORT message containing a position estimate.

17.2.2.3 LCS Network induced location request/ UE-Assisted GPS/ Emergency call/ With USIM

17.2.2.3.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities.

17.2.2.3.2 Conformance requirements

1) A MM connection for an emergency call may be established in all states of the mobility management sublayer which allow MM connection establishment for a normal originating call.

   When a user requests an emergency call establishment the UE will send a CM SERVICE REQUEST message to the network with a CM service type information element indicating emergency call establishment.

2) Having entered the "MM connection pending" state, upon MM connection establishment, the call control entity of the UE sends a setup message to its peer entity. This setup message is

   - a SETUP message, if the call to be established is a basic call; and
   - an EMERGENCY SETUP message, if the call to be established is an emergency call.

3) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

4) The UE shall:

1> when a measurement report is triggered:

   2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

      3> if the IE "Vertical Accuracy" is included:

         4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

References

- Conformance requirement 1: TS 24.008 clause 4.5.1.5.
- Conformance requirement 2: TS 24.008, clause 5.2.1.
- Conformance requirement 3: TS 25.331, clause 8.4.1.3.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.1a.

17.2.2.3.3 Test Purpose

To verify when an emergency call is initiated by a UE with a USIM, and the network performs a location request using the RRC measurement control procedure by sending Measurement Control message , then the UE respond with a Measurement Report containing “UE positioning GPS measured results”.

17.2.2.3.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

- the UE is in state "MM idle" with valid TMSI and CKSN.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Assisted Network Assisted GPS

Test Procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL procedure.

The UE then performs positioning measurements and responds with the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. Number shall be one programmed in test USIM EF_{ECC} (Emergency Call Codes), ref. 34.108 clause 8.3.2.21.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE assisted positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		AUTHENTICATION REQUEST	IE Authentication Parameter AUTN shall be present in the message.
5	-->		AUTHENTICATION RESPONSE	SRES specifies correct value.
6	SS			SS starts security procedure.
7	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
8	<--		CALL PROCEEDING	
9	<--		ALERTING	
10	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
11	<--		CONNECT	
12	-->		CONNECT ACKNOWLEDGE	
13	UE			The DTCH is through connected in both directions.
14	<-		MEASUREMENT CONTROL	
15	-->		MEASUREMENT REPORT	
16	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 15)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.2.3.5 Test requirements

After step 12 the UE shall have through connected the DTCH in both directions.

After step 14 the UE shall send a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

17.2.2.4 LCS Network induced location request/ UE-Assisted GPS/ Emergency call/ Without USIM

17.2.2.4.1 Definition

This test case applies to all UEs supporting UE-assisted A-GPS Location Service capabilities.

17.2.2.4.2 Conformance requirements

1) A MM connection for an emergency call may be established in all states of the mobility management sublayer which allow MM connection establishment for a normal originating call.

   When a user requests an emergency call establishment the UE will send a CM SERVICE REQUEST message to the network with a CM service type information element indicating emergency call establishment.

   Normally, the UE will be identified by an IMSI or a TMSI. However, if none of these identifiers is available in the UE, then the UE shall use the IMEI for identification purposes.

2) As a serving network option, emergency calls may be established without the network having to apply the security mode procedure as defined in TS 24.008.

   The following are the only cases where the "security procedure not applied" option may be used:

a) Authentication is impossible because the USIM is absent.

3) Having entered the "MM connection pending" state, upon MM connection establishment, the call control entity of the UE sends a setup message to its peer entity. This setup message is

   - a SETUP message, if the call to be established is a basic call; and
   - an EMERGENCY SETUP message, if the call to be established is an emergency call.

4) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

5) The UE shall:

1> when a measurement report is triggered:

   2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one

satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

3> if the IE "Vertical Accuracy" is included:

4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

References

- Conformance requirement 1: TS 24.008 clause 4.5.1.5, TS 22.101 clause 8.
- Conformance requirement 2: TS 33.102, clause 6.4.9.2.
- Conformance requirement 3: TS 24.008, clause 5.2.1.
- Conformance requirement 4: TS 25.331, clause 8.4.1.3.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.1a.

17.2.2.4.3 Test Purpose

To verify that when an emergency call is initiated by a UE with no USIM, and the network performs a network-induced location request using UE-assisted A-GPS, the UE responds with a Measurement Report containing the IE “UE positioning GPS measured results”.

17.2.2.4.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.

- Satellites: As specified in 17.2.1.2

- User Equipment:
  - the UE shall be in a state where no assistance data is stored in the UE.
  - the UE is in state "MM idle" with no IMSI and no USIM inserted.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Assisted Network Assisted GPS

Test procedure

The UE is made to initiate an emergency call. The call is established without authentication and security.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message. The assistance data is as specified in section 17.2.1.3.3 (Adequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.

The UE sends a MEASUREMENT REPORT message including the IE “UE positioning GPS measured results”.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. One of the following emergency numbers shall be used: 000, 08, 112, 110, 118, 119, 911 or 999.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE-assisted positioning measurement.
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment". The mobile identity IE specifies the IMEI of the UE. The cipher key sequence number IE indicates "no key is available".
4	<--		CM SERVICE ACCEPT	
5	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
6	<--		CALL PROCEEDING	
7	<--		ALERTING	
8	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
9	<--		CONNECT	
10	-->		CONNECT ACKNOWLEDGE	
11	UE			The DTCH is through connected in both directions.
12	<-		MEASUREMENT CONTROL	Assistance data as specified in section 17.2.1.3.3.
13	-->		MEASUREMENT REPORT	UE reports the IE “UE positioning GPS measured results”.
14	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 12):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in section 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 13):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.2.4.5 Test requirements

After step 10 the UE shall have through connected the DTCH in both directions.

After step 12 the UE shall respond with a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

17.2.3 Assisted GPS Mobile Originated Tests

17.2.3.1 Void

17.2.3.2 LCS Mobile originated location request/ UE-Based GPS/ Position estimate request/ Success

17.2.3.2.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities and providing a method to trigger an MO-LR request for a position estimate.

17.2.3.2.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

            5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

            5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

3) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4.

   If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

4) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

4> if the IE "GPS timing of Cell wanted" is set to FALSE:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

5) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

6) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

Reference(s):

- Conformance requirements 1, 5 and 6: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 25.331, subclause 8.4.1.3.
- Conformance requirement 3: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4.
- Conformance requirement 4: TS 25.331, subclause 8.6.7.19.1b
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.3.2.3 Test Purpose

To verify the UE behaviour at a mobile originated location request procedure using network-assisted UE-based GPS.

17.2.3.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “locationEstimate”. The SS orders an A-GPS positioning measurement using ~~three~~two MEASUREMENT CONTROL messages, including assistance data. The UE then initiates periodic measurement reporting. After the first received MEASUREMENT REPORT message, the SS responds with a FACILITY message containing an MO-LR result. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type "locationEstimate".
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
~~9~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~10~~9	->		MEASUREMENT REPORT	
~~11~~10	<-		FACILITY	LCS MO-LR result message containing location estimate
~~12~~11	->		RELEASE COMPLETE	The UE terminates the dialogue

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~9~~8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~ second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~10~~9)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

FACILITY (Step ~~11~~10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate locationEstimate ->any values may be used. The SS shall not be required to calculate the value from the returned gps-MeasureInfo values

RELEASE COMPLETE (Step ~~12~~11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.2.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate".

After step ~~9~~8, the UE shall respond with a MEASUREMENT REPORT message.

After step ~~11~~10, the UE shall send a RELEASE COMPLETE message.

17.2.3.3 LCS Mobile originated location request/ UE-Based or UE-Assisted GPS/ Assistance data request/ Success

17.2.3.3.1 Definition

This test case applies to all UEs supporting UE-Based or UE-Assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for assistance data.

17.2.3.3.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

3) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

Reference(s):

- Conformance requirements 1, 2 and 3: TS 24.030, subclause 5.1.1

17.2.3.3.3 Test Purpose

To verify the UE behaviour at a mobile originated location request procedure using network-assisted network assisted GPS.

17.2.3.3.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- UE Assisted Network Assisted GPS
- Method of clearing stored GPS assistance data
- Method of triggering an MO-LR request for assistance data.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “assistanceData”.

The SS transmits an ASSISTANCE DATA delivery message with assistance data. When the assistance data delivery was successful, the SS sends a FACILITY message to the UE.

The UE clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type "assistanceData".
7	<-		ASSISTANCE DATA DELIVERY	Assistance data as requested by the UE in step 6.
8	<-		ASSISTANCE DATA DELIVERY	Number of ASSISTANCE DATA DELIVERY
9	<-		ASSISTANCE DATA DELIVERY	Messages may depend on UE request in step 6.
10	<-		FACILITY	
11	->		RELEASE COMPLETE	The UE terminates the dialogue
12	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->assistanceData locationMethod -> assistedGPS gpsAssistanceData -> OCTET STRING Octets 1 to 38 are coded in the same way as octets 3 to 7+2n of Requested GPS Data IE in 3GPP TS 49.031
SS version indicator	Value 1 or above

ASSISTANCE DATA DELIVERY (Step 7):

Information element	Value/remark
Measurement Information Elements	
UE positioning OTDOA assistance data for UE-based	Not present
UE positioning GPS assistance data	Set as requested by the UE in step 6.

ASSISTANCE DATA DELIVERY (Step 8):

Information element	Value/remark
Measurement Information Elements	
UE positioning OTDOA assistance data for UE-based	Not present
UE positioning GPS assistance data	Set as requested by the UE in step 6.

ASSISTANCE DATA DELIVERY (Step 9):

Information element	Value/remark
Measurement Information Elements	
UE positioning OTDOA assistance data for UE-based	Not present
UE positioning GPS assistance data	Set as requested by the UE in step 6.

FACILITY (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	FACILITY (0x11 1010)
Facility	Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step 11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.3.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "assistanceData".

After step 10, the UE shall send a RELEASE COMPLETE message.

17.2.3.4 LCS Mobile originated location request/ UE-Assisted GPS/ Position Estimate/ Success

17.2.3.4.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for a position estimate.

17.2.3.4.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

…

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

3) The UE shall:

1> when a measurement report is triggered:

2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

3> if the IE "Vertical Accuracy" is included:

4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

4) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

5) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

References:

- Conformance requirements 1, 4 and 5: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 25.331, subclause 8.4.1.3
- Conformance requirement 3: TS 25.331, subclause 8.6.7.19b

17.2.3.4.3 Test Purpose

To verify the UE behaviour in the mobile-originated location request procedure using network-assisted UE-assisted GPS to request a position estimate from the network.

17.2.3.4.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS
- Method of clearing stored GPS assistance data
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes an MO-LR request through the Facility IE in a REGISTER message. The MO-LR request ~~if~~ is of type “locationEstimate”.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data. The UE then initiates periodic measurement reporting. After receiving the MEASUREMENT REPORT message, the SS responds with a FACILITY message containing an MO-LR result. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE "MOLR-Type" is set to "locationEstimate".
7	<-		MEASUREMENT CONTROL	
8	->		MEASUREMENT REPORT	
9	<-		FACILITY	LCS MO-LR result message containing location estimate
10	->		RELEASE COMPLETE	The UE terminates the dialogue
11	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type -> locationEstimate Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE

- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for "Adequate assistance data for UE-assisted A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 8)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

FACILITY (Step 9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	FACILITY (0x11 1010)
Facility	Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate locationEstimate ->any values may be used. The SS shall not be required to calculate the value from the returned gps-MeasureInfo values

RELEASE COMPLETE (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.4.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate".

After step 7, the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning GPS measured results".

After step 9, the UE shall send a RELEASE COMPLETE message.

17.2.3.5 Void

17.2.3.6 LCS Mobile originated location request/ UE-Based GPS/ Transfer to third party/ Success

17.2.3.6.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities and providing a method to trigger an MO-LR request for transfer to 3rd party.

17.2.3.6.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) If the UE is requesting that its location be sent to an external LCS client, the message shall include the identity of the LCS client and may include the address of the GMLC through which the LCS client should be accessed.

3) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

4) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS

UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

5) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

1> if an update has been provided for this satellite:

2> act as specified in subclause 8.6.7.19.3.4.

If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

1> update the variable UE_POSITIONING_GPS_DATA as follows:

2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

6) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

4> if the IE "GPS timing of Cell wanted" is set to FALSE:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

7) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

8) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

Reference(s):

- Conformance requirements 1, 7 and 8: TS 24.030, subclause 5.1.1
- Conformance requirement 3: TS 25.331, subclause 8.4.1.3
- Conformance requirement 2: TS 23.171, subclause 8.8.1
- Conformance requirement 4: TS 25.331, subclause 8.4.1.3
- Conformance requirement 5: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4
- Conformance requirement 6: TS 25.331, subclause 8.6.7.19.1b
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.3.6.3 Test Purpose

To verify the UE behaviour in the mobile-originated location request procedure using network-assisted UE-based GPS to request a position estimate from the network for transfer to a third-party LCS client.

17.2.3.6.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:

- The UE is in state "MM idle" with valid TMSI and CKSN.
- The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type “locationEstimate”. The IE “LCSClientExternalID” is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages, including assistance data.

The UE sends a MEASUREMENT REPORT message containing a location estimate.

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service”
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE “MOLR-Type” is set to “locationEstimate”. The IE “LCSClientExternalID” is set to a valid ID for an external LCS client.
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
~~9~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~10~~9	->		MEASUREMENT REPORT	

~~11~~10	<-	FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
~~12~~11	->	RELEASE COMPLETE	The UE terminates the dialogue
~~13~~12	SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~9~~8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~10~~9)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

FACILITY (Step ~~11~~10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step ~~12~~11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

17.2.3.6.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate" and the IE "LCSClientExternalID" set to the ID of a valid external LCS client.

After step ~~9~~8, the UE shall respond with a MEASUREMENT REPORT message containing the IE "Position Estimate".

After step ~~12~~11, the UE shall send a RELEASE COMPLETE message.

17.2.3.7 LCS Mobile originated location request/ UE-Assisted GPS/ Transfer to third party/ Success

17.2.3.7.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for transfer to 3rd party.

17.2.3.7.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) If the UE is requesting that its location be sent to an external LCS client, the message shall include the identity of the LCS client and may include the address of the GMLC through which the LCS client should be accessed.

3) if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

…

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

4) The UE shall:

1> when a measurement report is triggered:

2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

3> if the IE "Vertical Accuracy" is included:

4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

5) The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

6) After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

Reference(s):

- Conformance requirements 1, 5 and 6: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 23.171, subclause 8.8.1
- Conformance requirement 3: TS 25.331, subclause 8.4.1.3
- Conformance requirement 4: TS 25.331, subclauses 8.6.7.19.3.3b

17.2.3.7.3 Test Purpose

To verify the UE behaviour in the mobile-originated location request procedure using network-assisted UE-assisted GPS to request a position estimate from the network for transfer to a third-party LCS client.

17.2.3.7.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type “locationEstimate”. The IE “LCSClientExternalID” is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.2. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE “Error reason” set to “Assistance Data Missing”. If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message containing IE “UE positioning GPS measured results”.

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE "MOLR-Type" is set to "locationEstimate". The IE "LCSClientExternalID" is set to a valid ID for an external LCS client.
7	<-		MEASUREMENT CONTROL	
8	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
8a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 8, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.
8b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 8, this message contains the IE "UE positioning GPS measured results".
9	<-		FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
10	->		RELEASE COMPLETE	The UE terminates the dialogue
11	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 8 (Option 1) and 8b)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 8 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 8a):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

FACILITY (Step 9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	FACILITY (0x11 1010)
Facility	Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.7.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate" and the IE "LCSClientExternalID" set to the ID of a valid external LCS client.

After step 7, the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning GPS measured results".

After step 9, the UE shall send a RELEASE COMPLETE message.

17.2.3.8 LCS Mobile originated location request/ UE-Based or UE-Assisted GPS/ Assistance data request/ Failure

17.2.3.8.1 Definition

This test case applies to all UEs supporting UE-based or UE-assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for assistance data.

17.2.3.8.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component.

2) If the network is unable to successfully fulfil the request received from the MS (e.g. to provide a location estimate or location assistance information), it shall clear the transaction by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3GPP TS 24.080.

3) PositionMethodFailure: This error is returned by the network when the network is unable to obtain any of the location information requested or none of the information obtained satisfies the requested LCS QoS or if requested LCS assistance data could not be transferred or requested deciphering keys for broadcast assistance data could not be returned.

Reference(s):

- Conformance requirements 1 and 2: TS 24.030, subclause 5.1.1

- Conformance requirement 3: TS 24.080, subclause 4.3.2.29

17.2.3.8.3 Test Purpose

To verify the UE behaviour at a mobile originated location request for GPS assistance data where the network is unable to provide the requested GPS assistance data.

17.2.3.8.4 Method of Test

Initial Conditions

- System Simulator:

  - 1 cell, default parameters.

- User Equipment:

  - The UE is in state "MM idle" with valid TMSI and CKSN.

- The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS, or UE Assisted Network Assisted GPS
- Method of triggering an MO-LR request for assistance data.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes an MO-LR request of type “assistanceData”.

The SS is unable to provide the requested assistance data.

The SS sends a RELEASE COMPLETE message containing a return error component.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service”
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request of type “assistanceData”.
7	SS			SS is unable to provide the requested assistance data
8	<-		RELEASE COMPLETE	SS terminates the dialogue containing a return error component
9	SS			The SS waits for 10 seconds to verify that the UE does not send a RELEASE COMPLETE message.
10	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->assistanceData locationMethod -> assistedGPS gpsAssistanceData -> OCTET STRING Octets 1 to 38 are coded in the same way as octets 3 to 7+2n of Requested GPS Data IE in 3GPP TS 49.031
SS version indicator	Value 1 or above

RELEASE COMPLETE (Step 8)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return error = LCS-MOLR Error -> positionMethodFailure

17.2.3.8.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "assistanceData".

During step 9 the UE shall not send any RELEASE COMPLETE message.

17.2.3.9 LCS Mobile originated location request/ UE-Based GPS/ Position estimate request/ Failure

17.2.3.9.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities and providing a method to trigger an MO-LR request for a position estimate.

17.2.3.9.2 Conformance requirements

1) The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component. SS Version Indicator value 1 or above shall be used.

2) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

            5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

            5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

3) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4.

   If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

4) The UE shall when a measurement report is triggered:

   2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

      3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

         4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

         4> if the IE "GPS timing of Cell wanted" is set to FALSE:

            5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

5) The UE shall set the contents of the IE "UE positioning Error" as follows:

…

1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":

2> if there were not enough GPS satellites to be received:

3> set IE "Error reason" to "Not Enough GPS Satellites".

2> if some GPS assistance data was missing:

3> set IE "Error reason" to "Assistance Data Missing"; and

3> if the IE ""Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT_IDENTITY is set to TRUE:

4> include the IE "GPS Additional Assistance Data Request".

6) If the network is unable to successfully fulfil the request received from the MS (e.g. to provide a location estimate or location assistance information), it shall clear the transaction by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3GPP TS 24.080.

7) PositionMethodFailure: This error is returned by the network when the network is unable to obtain any of the location information requested or none of the information obtained satisfies the requested LCS QoS or if requested LCS assistance data could not be transferred or requested deciphering keys for broadcast assistance data could not be returned.

Reference(s):

- Conformance requirements 1 and 6: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 25.331, subclause 8.4.1.3.
- Conformance requirement 3: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4.
- Conformance requirement 4: TS 25.331, subclause 8.6.7.19.1b
- Conformance requirement 5: TS 25.331, subclause 8.6.7.19.5
- Conformance requirement 7: TS 24.080, subclause 4.3.2.29
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.3.9.3 Test Purpose

To verify the UE behaviour at a mobile originated location request procedure using network-assisted UE-based GPS when the MO-LR procedure fails due to failure of positioning method.

17.2.3.9.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellite Simulator is switched off
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

Then the UE invokes an MO-LR request of type “locationEstimate”. The SS orders an A-GPS positioning measurement using ~~three~~two MEASUREMENT CONTROL messages, including assistance data.

The UE sends a MEASUREMENT REPORT message reporting a positioning error for not enough satellite signals received.

The SS sends a RELEASE COMPLETE message containing a return error component.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with a LCS MO-LR request of type "locationEstimate".
7	<-		MEASUREMENT CONTROL	
8	<-		MEASUREMENT CONTROL	
~~9~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~10~~9	->		MEASUREMENT REPORT	Positioning error report "not enough GPS satellites"
~~11~~10	SS			SS is unable to fulfil the MO-LR request
~~12~~11	<-		RELEASE COMPLETE	SS terminates the dialogue containing a return error component

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~9~~8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~10~~9):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Not Enough GPS Satellites
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

RELEASE COMPLETE (Step ~~12~~11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)
Facility	Return error = LCS-MOLR Error -> positionMethodFailure

17.2.3.9.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with a LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate".

After step ~~9~~8, the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning error", with "Error reason" set to "Not Enough GPS Satellites".

17.2.4 Assisted GPS Mobile Terminated Tests

17.2.4.1 LCS Mobile terminated location request/ UE-Based GPS

17.2.4.1.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.1.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

   In the case of location notification no response is required from the UE, the UE shall terminate the dialoque by sending a RELEASE COMPLETE message containing a LocationNotification return result.

2) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

            5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

            5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

3) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4 of TS 25.331.

4) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in ICD-GPS-200.

5) If the IE "UE positioning GPS reference time" is included, the UE shall:

   1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

6) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

1> use it as a priori knowledge of the approximate location of the UE.

7) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

4> if the IE "GPS timing of Cell wanted" is set to FALSE:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

References

- Conformance requirement 1: TS 24.030, clause 4.1.1.
- Conformance requirement 2: TS 25.331, clause 8.4.1.3.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.3.3a.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.4.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 7: TS 25.331, clause 8.6.7.19.1b.

17.2.4.1.3 Test Purpose

To verify that when the UE receives a REGISTER message during an established CS call, containing a LCS Location Notification Invoke component set to NotifyLocationAllowed, the UE displays information about the LCS client correctly and sends a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

To verify that the UE responds with a Measurement Report message containing UE location when the assistance data is divided between several Measurement Control messages using Measurement Command "Modify".

17.2.4.1.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Based Network Assisted GPS

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using ~~three~~two MEASUREMENT CONTROL messages. ~~The assistance data includes navigation models for the satellites including a number of non-existing satellites.~~ The last MEASUREMENT CONTROL message orders periodical reporting.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including a location estimate.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<-		MEASUREMENT CONTROL	
~~5~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~6~~5	<-		MEASUREMENT CONTROL	Periodical reporting is configured.
~~7~~6	->		MEASUREMENT REPORT	

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingString nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~6~~5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~7~~6)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.1.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step ~~6~~ 5 the UE shall respond with a MEASUREMENT REPORT message.

17.2.4.2 LCS Mobile-terminated location request/UE-Based GPS/ Request of additional assistance data/ Success

17.2.4.2.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.2.2 Conformance requirements

1) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

   - if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

   - if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

   5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

   5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

2) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4.

3) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

4) If the IE "UE positioning GPS reference time" is included, the UE shall:

1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

- store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

- if the IE "SFN" and IE "UTRAN GPS timing of cell frames" are included:
  - if the UE is able to utilise the IEs:
    - store these IEs in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - if the UE is not in CELL_DCH state:
        - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the serving cell.
      - if the UE is in CELL_DCH state:
        - ignore IEs "SFN" and "UTRAN GPS timing of cell frames".
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
      - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
      - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
- if the IE "SFN-TOW Uncertainty" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it to determine if the relationship between GPS time and air-interface timing of the NODE B transmission is known to within at least 10ms.
- if the IE "$T_{UTRAN-GPS}$ drift rate" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA; and
  - may use it as an estimate of the drift rate of the NODE B clock relative to GPS time.
- if the IE "GPS TOW Assist" is included:
  - for each satellite:

3> delete all information currently stored in the IE "GPS TOW Assist" in the IE "UE positioning GPS reference time" in the variable UE_POSITIONING_GPS_DATA;

3> store the received GPS TOW Assist information in the IE “UE positioning GPS reference time” in the variable UE_POSITIONING_GPS_DATA.

5) If the IE “UE positioning GPS reference UE position” is included, the UE shall:

1> store this IE in the IE “UE positioning GPS reference UE position” in variable UE_POSITIONING_GPS_DATA; and

1> use it as a priori knowledge of the approximate location of the UE.

6) If IE “UE positioning GPS ionospheric model” is included, the UE shall:

1> store this IE in the IE “UE positioning GPS ionospheric model” in variable UE_POSITIONING_GPS_DATA;

1> act on these GPS ionospheric model parameters in a manner similar to that specified in [12].

7) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

- include IE “UE positioning Position Estimate Info” in the MEASUREMENT REPORT and set the contents of the IE as follows:
  - if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or
  - if the IE “GPS timing of Cell wanted” is set to FALSE:
    - include the IE “GPS TOW msec”.
  - if IE “Vertical Accuracy” has been included in IE “UE positioning reporting quantity”:
    - if the IE “Vertical Accuracy” has been assigned to a value unequal to “0”:
      - if the UE has been able to calculate a 3-dimensional position:
        - include IE “Ellipsoid point with altitude and uncertainty ellipsoid” as the position estimate.
      - if the UE has not been able to calculate a 3-dimensional position:
        - act as if IE “Vertical Accuracy” has not been included in IE “UE positioning reporting quantity”.
  - if IE “Vertical Accuracy” has not been included in IE “UE positioning reporting quantity”:
  - if IE “Horizontal Accuracy” in IE “UE positioning reporting quantity” has been assigned to a value unequal to 0:

6> include either IE “Ellipsoid point with uncertainty circle” or IE “Ellipsoid point with uncertainty ellipse” or IE “Ellipsoid point with altitude and uncertainty ellipsoid” as the position estimate.

8) The UE shall set the contents of the IE "UE positioning Error" as follows:

…

1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":

2> if there were not enough GPS satellites to be received:

3> set IE "Error reason" to "Not Enough GPS Satellites".

2> if some GPS assistance data was missing:

3> set IE "Error reason" to "Assistance Data Missing"; and

3> if the IE ""Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT_IDENTITY is set to TRUE:

4> include the IE "GPS Additional Assistance Data Request".

Reference(s):

- Conformance requirement 1: TS 25.331, subclause 8.4.1.3.
- Conformance requirement 2: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.5.
- Conformance requirement 7: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 8: TS 25.331, clause 8.6.7.19.5.
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.4.2.3 Test Purpose

To verify the UE’s behavior in a mobile-terminated location request procedure using UE-based A-GPS with assistance data from the network.

To verify that the UE in CELL_DCH state accepts assistance data received in multiple MEASUREMENT CONTROL messages.

To verify that the UE includes the IE “GPS Additional Assistance Data Request” to request assistance data when it does not have enough assistance data to compute a position.

17.2.4.2.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:

- The UE shall begin the test with no GPS assistance data stored.
- The UE is in state "MM idle" with valid TMSI and CKSN.
- The UE is in state “PMM idle” with valid P-TMSI
- The UE is in CELL_DCH state.

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL including no assistance data.

The UE sends a MEASUREMENT REPORT message to report a positioning error, requesting further assistance data. The SS response with a MEASUREMENT CONTROL message that includes assistance data for four satellites and instructs the UE not to repeat the request for assistance data. Two supplementary MEASUREMENT CONTROL messages provide assistance data for four additional satellites each, and the last message orders periodic reporting.

The UE performs positioning measurements and responds with a MEASUREMENT REPORT message containing a valid position estimate in the IE “UE Positioning Position Estimate Info”.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<--		MEASUREMENT CONTROL	No assistance data, and “Additional Assistance Data Request” IE set to TRUE.
5	-->		MEASUREMENT REPORT	Positioning error report with request for further assistance data.
6	<--		MEASUREMENT CONTROL	
~~7~~	~~<--~~		~~MEASUREMENT CONTROL~~	
~~8~~7	<--		MEASUREMENT CONTROL	Reporting mode: Periodical reporting Amount of reporting: 1 Reporting interval: 64000
~~9~~8	-->		MEASUREMENT REPORT	Measurement report message containing UE position estimate.

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)
Facility	Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Inadequate assistance data for UE-based A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked

Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	No reporting
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	No reporting
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~8~~7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3, and according to 17.2.1.2 as requested by the UE in step 2
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~9~~8):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.2.5 Test Requirements

At step 5 the UE shall send a MEASUREMENT REPORT message containing the IE "UE positioning error", with "Error reason" set to "Assistance Data Missing".

At step ~~9~~ 8 the UE shall send a MEASUREMENT REPORT message containing a valid UE position estimate.

17.2.4.3 LCS Mobile-terminated location request/UE-Based GPS/ Failure – Not Enough Satellites

17.2.4.3.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.3.2 Conformance requirements

7) if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

- if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

- if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

8) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

1> if an update has been provided for this satellite:

2> act as specified in subclause 8.6.7.19.3.4.

9) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

1> update the variable UE_POSITIONING_GPS_DATA as follows:

2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

10) If the IE "UE positioning GPS reference time" is included, the UE shall:

1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

- store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

- if the IE "SFN" and IE "UTRAN GPS timing of cell frames" are included:
  - if the UE is able to utilise the IEs:
    - store these IEs in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - if the UE is not in CELL_DCH state:
        - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the serving cell.
      - if the UE is in CELL_DCH state:
        - ignore IEs "SFN" and "UTRAN GPS timing of cell frames".
    - if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
      - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA;
      - use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
- if the IE "SFN-TOW Uncertainty" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it to determine if the relationship between GPS time and air-interface timing of the NODE B transmission is known to within at least 10ms.
- if the IE "$T_{UTRAN-GPS}$ drift rate" is included:
  - store this IE in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA; and
  - may use it as an estimate of the drift rate of the NODE B clock relative to GPS time.
- if the IE "GPS TOW Assist" is included:
  - for each satellite:

3> delete all information currently stored in the IE "GPS TOW Assist" in the IE "UE positioning GPS reference time" in the variable UE_POSITIONING_GPS_DATA;

3> store the received GPS TOW Assist information in the IE "UE positioning GPS reference time" in the variable UE_POSITIONING_GPS_DATA.

11) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

1> use it as a priori knowledge of the approximate location of the UE.

12) If IE "UE positioning GPS ionospheric model" is included, the UE shall:

1> store this IE in the IE "UE positioning GPS ionospheric model" in variable UE_POSITIONING_GPS_DATA;

1> act on these GPS ionospheric model parameters in a manner similar to that specified in [12].

7) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

- include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:
  - if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or
  - if the IE "GPS timing of Cell wanted" is set to FALSE:
    - include the IE "GPS TOW msec".
  - if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":
    - if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":
      - if the UE has been able to calculate a 3-dimensional position:
        - include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.
      - if the UE has not been able to calculate a 3-dimensional position:
        - act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".
  - if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":
  - if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

7> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

8) The UE shall set the contents of the IE "UE positioning Error" as follows:

…

1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":

2> if there were not enough GPS satellites to be received:

3> set IE "Error reason" to "Not Enough GPS Satellites".

2> if some GPS assistance data was missing:

3> set IE "Error reason" to "Assistance Data Missing"; and

3> if the IE ""Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT_IDENTITY is set to TRUE:

4> include the IE "GPS Additional Assistance Data Request".

Reference(s):

- Conformance requirement 1: TS 25.331, subclause 8.4.1.3.
- Conformance requirement 2: TS 25.331, subclauses 8.6.7.19.3.3a, 8.6.7.19.3.4.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 4: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.8.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.5.
- Conformance requirement 7: TS 25.331, clause 8.6.7.19.1b.
- Conformance requirement 8: TS 25.331, clause 8.6.7.19.5.
- Reference [12] in these conformance requirements denotes document ICD-GPS-200: “Navstar GPS Space Segment/Navigation User Interface”.

17.2.4.3.3 Test Purpose

To verify the UE’s behavior in a mobile-terminated location request procedure using UE-based A-GPS with assistance data from the network.

To verify that the UE in CELL_DCH state accepts assistance data received in multiple MEASUREMENT CONTROL messages.

To verify that the UE sets the IE Error Reason in ‘UE Postioning Error’ to ‘Not Enough GPS Satellites’ when it does not receive enough satellite signals to compute a position.

17.2.4.3.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.

- Satellite Simulator is switched off.

- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI
  - The UE is in CELL_DCH state.

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of clearing stored GPS assistance data

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using ~~three~~two MEASUREMENT CONTROL messages. ~~The assistance data includes navigation models for the satellites including a number of non-existing satellites.~~ The last MEASUREMENT CONTROL message orders periodical reporting.

The UE sends a MEASUREMENT REPORT message reporting a positioning error for not enough satellite signal.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<--		MEASUREMENT CONTROL	
~~5~~	~~<--~~		~~MEASUREMENT CONTROL~~	
6	<--		MEASUREMENT CONTROL	Periodical reporting is configured
7	-->		MEASUREMENT REPORT	Positioning error report ‘not enough GPS satellites’

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)
Facility	Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

~~MEASUREMENT CONTROL (Step 5):~~

~~Information element~~	~~Value/remark~~
~~**Measurement Information Elements**~~	
~~Measurement Identity~~	~~10~~
~~Measurement Command~~	~~Modify~~
~~Measurement Reporting Mode~~	~~Not present~~
~~Additional Measurements List~~	~~Not present~~
~~CHOICE *Measurement type*~~	
~~- UE positioning measurement~~	
~~- UE positioning reporting quantity~~	
~~- Method type~~	~~UE based~~
~~- Positioning methods~~	~~GPS~~
~~- Response time~~	~~128~~
~~- Horizontal accuracy~~	~~Set according to 17.2.1.2 (unequal to 0)~~
~~- Vertical accuracy~~	~~Set according to 17.2.1.2 (unequal to 0)~~

~~- GPS timing of cell wanted~~	~~FALSE~~
~~- Multiple sets~~	~~FALSE~~
~~- Additional assistance data request~~	~~FALSE~~
~~- Environmental characterization~~	~~Not present~~
~~- Measurement validity~~	
~~- UE state~~	~~All states~~
~~- CHOICE *Reporting criteria*~~	
~~- No reporting~~	
~~- UE pos OTDOA assistance data for UE-assisted~~	~~Not present~~
~~- UE pos OTDOA assistance data for UE-based~~	~~Not present~~
~~- UE positioning GPS assistance data~~	~~Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3~~
~~**Physical Channel Information Elements**~~	
~~DPCH compressed mode status info~~	~~Not present~~

MEASUREMENT CONTROL (Step ~~6~~5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~7~~6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	

- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Not Enough GPS Satellites
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.3.5 Test Requirements

At step ~~7~~ 6 the UE shall send a MEASUREMENT REPORT message containing the IE “UE positioning error”, with “Error reason” set to “Not Enough GPS Satellites”.

17.2.4.4 LCS Mobile terminated location request/ UE-Assisted GPS/ Success

17.2.4.4.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities.

17.2.4.4.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

   In the case of location notification no response is required from the UE, the UE shall terminate the dialoque by sending a RELEASE COMPLETE message containing a LocationNotification return result.

2) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

3) The UE shall:

1> when a measurement report is triggered:

2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

3> if the IE "Vertical Accuracy" is included:

4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

References

- Conformance requirement 1: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 25.331, clause 8.4.1.3.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.1a.

17.2.4.4.3 Test Purpose

To verify the UE behaviour in the mobile-terminated location request procedure using network-assisted UE-assisted GPS to deliver UE positioning measurements to the network.

17.2.4.4.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Assisted Network Assisted GPS

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message. The assistance data is as described in section 17.2.1.3.3 (Adequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including the IE “UE positioning GPS measured results”.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<-		MEASUREMENT CONTROL	Periodical reporting is configured.
5	->		MEASUREMENT REPORT	

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.4.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step 4 the UE shall respond with a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

17.2.4.5 LCS Mobile terminated location request/ UE-Assisted GPS/ Request for additional assistance data/ Success

17.2.4.5.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities.

17.2.4.5.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

   In the case of location notification no response is required from the UE, the UE shall terminate the dialoque by sending a RELEASE COMPLETE message containing a LocationNotification return result.

2) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

3) The UE shall:

1> when a measurement report is triggered:

2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

3> if the IE "Vertical Accuracy" is included:

4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

4) 1> if the UE is not able to report the requested measurement results:

2> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.

5) if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":

2> if there were not enough GPS satellites to be received:

3> set IE "Error reason" to "Not Enough GPS Satellites".

2> if some GPS assistance data was missing:

3> set IE "Error reason" to "Assistance Data Missing"; and

3> if the IE "Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT_IDENTITY is set to FALSE:

4> not include the IE "GPS Additional Assistance Data Request", and use the assistance data available for doing a positioning estimate.

References

- Conformance requirement 1: TS 24.030, subclause 5.1.1
- Conformance requirement 2: TS 25.331, clause 8.4.1.3.
- Conformance requirements 3 and 4: TS 25.331, clause 8.6.7.19.1a.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.5.

17.2.4.5.3 Test Purpose

To verify the UE behaviour in the mobile-terminated location request procedure using network-assisted UE-assisted GPS to deliver UE positioning measurements to the network.

To verify that the UE includes the IE “GPS Additional Assistance Data Request” to request additional assistance data when it does not have enough assistance data to perform the requested measurements.

17.2.4.5.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Assisted Network Assisted GPS

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message. The assistance data is as described in section 17.2.1.3.2 (Inadequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including a request for additional assistance data. The SS responds with a MEASUREMENT CONTROL message containing assistance data as specified in section 17.2.1.3.3 (Adequate assistance data for UE-assisted A-GPS). The UE sends a MEASUREMENT REPORT message including the IE "UE positioning GPS measured results".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<-		MEASUREMENT CONTROL	Periodical reporting is configured. Assistance data set as specified in section 17.2.1.3.2 (Inadequate assistance data for UE-assisted A-GPS).
5	->		MEASUREMENT REPORT	UE requests additional assistance data.
6	<-		MEASUREMENT CONTROL	Assistance data set as requested by the UE in step 5.
7	->		MEASUREMENT REPORT	UE sends the IE "UE positioning GPS measured results".

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Inadequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Present, if requested by UE
- UTC model	Present, if requested by UE
- Ionospheric model	Present, if requested by UE
- Navigation model	Present, if requested by UE
- DGPS corrections	Present, if requested by UE
- Reference location	Present, if requested by UE
- Reference time	Present, if requested by UE
- Acquisition assistance	Present, if requested by UE
- Real-time integrity	Present, if requested by UE
- Navigation model additional data	Present, if requested by UE
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as requested by the UE in step 5.
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.5.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step 4 the UE shall respond with a MEASUREMENT REPORT message containing the IE “UE positioning error”, with “Error reason” set to “Assistance data missing”.

After step 6 the UE shall send a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

17.2.4.6 LCS Mobile terminated location request/ UE-Based GPS/ Privacy Verification/ Location Allowed if No Response

17.2.4.6.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.6.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

2) In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component.

3) If the timer expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interpret this by applying the default treatment defined in GSM 03.71 for GSM and TS 23.171 for UMTS (i.e. disallow location if barred by subscription and allow location if allowed by subscription).

4) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

5) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

            5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

            5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

6) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4 of TS 25.331.

7) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in ICD-GPS-200.

8) If the IE "UE positioning GPS reference time" is included, the UE shall:

   1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

   1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

   NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

9) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

   1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

   1> use it as a priori knowledge of the approximate location of the UE.

10) The UE shall when a measurement report is triggered:

   2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

      3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

         4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

         4> if the IE "GPS timing of Cell wanted" is set to FALSE:

            5> include the IE "GPS TOW msec".

         4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

            5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

               6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

References

- Conformance requirement 1, 2 and 3: TS 24.030, clause 4.1.1.

-- Conformance requirements 4 and 5: TS 25.331, subclause 8.4.1.3

- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.3a.

- Conformance requirement 7: TS 25.331, clause 8.6.7.19.3.4.

- Conformance requirement 8: TS 25.331, clause 8.6.7.19.3.7.

- Conformance requirement 9: TS 25.331, clause 8.6.7.19.3.8.

- Conformance requirement 10: TS 25.331, clause 8.6.7.19.1b.

17.2.4.6.3 Test Purpose

To verify that when the UE receives a REGISTER message, containing a LCS Location Notification Invoke component set to notifyAndVerify-LocationAllowedIfNoResponse, the UE notifies the user of the request and indicates that the default response is location allowed if no response and providing the opportunity to accept or deny the request and sends a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied or permissionGranted as appropriate.

17.2.4.6.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters

- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including a location estimate.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user ignores the location request by taking no action.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE then sends a MEASUREMENT REPORT message including a location estimate.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	
7	<-		MEASUREMENT CONTROL	
~~8~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~9~~8	->		MEASUREMENT REPORT	
~~10~~9	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
~~11~~10	SS			SS starts timer T(LCSN) set to 20 seconds
~~12~~11	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
~~13~~12	UE			The user denies the location request within < 20 seconds
~~14~~13	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
~~15~~14	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
~~16~~15	SS			SS starts timer T(LCSN) set to 20 seconds
~~17~~16	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
~~18~~17	UE			The user does not reply
~~19~~18	SS			SS waits for 20 seconds (until T(LCSN) expires) to ensure that the UE does not send a RELEASE COMPLETE message.
~~20~~19	<-		RELEASE COMPLETE	SS terminates the dialogue
~~21~~20	<-		MEASUREMENT CONTROL	
~~22~~21	<-		MEASUREMENT CONTROL	
~~23~~	~~<-~~		~~MEASUREMENT CONTROL~~	
~~24~~22	->		MEASUREMENT REPORT	
~~25~~23	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~8~~7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~9~~8)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

REGISTER (Step ~~10~~9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~14~~13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step ~~15~~14)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~20~~19)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

MEASUREMENT CONTROL (Step ~~21~~20):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 22):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~23~~21):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~24~~22)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

17.2.4.6.5 Test requirements

After step 4 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionGranted.

After step ~~8~~ 7 the UE shall respond with a MEASUREMENT REPORT message containing a UE position estimate.

After step ~~13~~ 12 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionDenied.

After step ~~23~~ 21 the UE shall respond with a MEASUREMENT REPORT message containing a UE position estimate.

17.2.4.7 LCS Mobile terminated location request/ UE-Based GPS/ Privacy Verification/ Location Not Allowed if No Response

17.2.4.7.1 Definition

This test case applies to all UEs supporting UE-Based GPS Location Service capabilities.

17.2.4.7.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

2) In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component.

3) If the timer expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interpret this by applying the default treatment defined in GSM 03.71 for GSM and TS 23.171 for UMTS (i.e. disallow location if barred by subscription and allow location if allowed by subscription).

4) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

5) if the IE "Measurement command" has the value "modify":

   2> for all IEs present in the MEASUREMENT CONTROL message:

      3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

         4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:

            5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

            5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

6) If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

   1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";

   1> if an update has been provided for this satellite:

      2> act as specified in subclause 8.6.7.19.3.4 of TS 25.331.

7) If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

   1> update the variable UE_POSITIONING_GPS_DATA as follows:

      2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE_POSITIONING_GPS_DATA, possibly overwriting any existing information in this position.

   1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in ICD-GPS-200.

8) If the IE "UE positioning GPS reference time" is included, the UE shall:

   1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as the current GPS week;

   1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE_POSITIONING_GPS_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

   NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

9) If the IE "UE positioning GPS reference UE position" is included, the UE shall:

   1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE_POSITIONING_GPS_DATA; and

   1> use it as a priori knowledge of the approximate location of the UE.

10) The UE shall when a measurement report is triggered:

2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED in case of OTDOA or on the list of satellites included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning:

3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:

4> if the UE does not support the capability to perform the UE GPS timing of cell frames measurement; or

4> if the IE "GPS timing of Cell wanted" is set to FALSE:

5> include the IE "GPS TOW msec".

4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":

5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":

6> if the UE has been able to calculate a 3-dimensional position:

7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

6> if the UE has not been able to calculate a 3-dimensional position:

7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".

4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":

6> may include IE "Ellipsoid point".

5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:

6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.

References

- Conformance requirement 1, 2 and 3: TS 24.030, clause 4.1.1.
- Conformance requirements 4 and 5: TS 25.331, clause 8.4.1.3.
- Conformance requirement 6: TS 25.331, clause 8.6.7.19.3.3a.
- Conformance requirement 7: TS 25.331, clause 8.6.7.19.3.4.
- Conformance requirement 8: TS 25.331, clause 8.6.7.19.3.7.
- Conformance requirement 9: TS 25.331, clause 8.6.7.19.3.8.

- Conformance requirement 10: TS 25.331, clause 8.6.7.19.1b.

17.2.4.7.3 Test Purpose

To verify that when the UE receives a REGISTER message, containing a LCS Location Notification Invoke component set to notifyAndVerify-LocationNotAllowedIfNoResponse, the UE notifies the user of the request and indicates that the default response is location not allowed if no response and providing the opportunity to accept or deny the request and sends a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied or permissionGranted as appropriate.

17.2.4.7.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be not allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including a location estimate.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationNotAllowed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
2		SS		SS starts timer T(LCSN) set to 20 seconds
3		UE		The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
4		UE		The user accepts the location request within < 20 seconds
5		->	RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6		<-	MEASUREMENT CONTROL	
7		<-	MEASUREMENT CONTROL	
~~8~~		~~<-~~	~~MEASUREMENT CONTROL~~	
9		->	MEASUREMENT REPORT	
10		<-	REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
11		SS		SS starts timer T(LCSN) set to 20 seconds
12		UE		The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
13		UE		The user denies the location request within < 20 seconds
14		->	RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
15		<-	REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
16		SS		SS starts timer T(LCSN) set to 20 seconds
17		UE		The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
18		UE		The user does not reply
19		SS		SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
20		<-	RELEASE COMPLETE	SS terminates the dialogue
21		SS		SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the first MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	Not present
Additional Measurements List	Not present
CHOICE *Measurement type*	
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	
- No reporting	
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step ~~8~~7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE based
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for the ~~third~~second MEASUREMENT CONTROL message for "Adequate assistance data for UE-based A-GPS" in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step ~~9~~8)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	
- CHOICE *Reference time*	
- GPS reference time only	
- GPS TOW msec	Not checked
- CHOICE *Position estimate*	One of 'Ellipsoid point with uncertainty Circle' or 'Ellipsoid point with uncertainty Ellipse' or 'Ellipsoid point with altitude and uncertainty Ellipsoid'
- UE positioning GPS measured results	Not present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

REGISTER (Step ~~10~~9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~14~~13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step ~~15~~14)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step ~~20~~19)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.4.7.5 Test requirements

After step 4 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionGranted.

After step ~~8~~ 7 the UE shall respond with a MEASUREMENT REPORT message containing a UE position estimate.

After step ~~13~~ 12 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionDenied.

During step ~~19~~ 18 the UE shall not send any RELEASE COMPLETE message.

17.2.4.8 LCS Mobile terminated location request/ UE-Assisted GPS/ Privacy Verification/ Location Allowed if No Response

17.2.4.8.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities.

17.2.4.8.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

2) In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component.

3) If the timer expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interpret this by applying the default treatment defined in GSM 03.71 for GSM and TS 23.171 for UMTS (i.e. disallow location if barred by subscription and allow location if allowed by subscription).

4) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

5) The UE shall:

   1> when a measurement report is triggered:

   2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

      3> if the IE "Vertical Accuracy" is included:

         4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

      3> if the IE "Positioning Methods" is set to "GPS":

4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

6> if the IE "GPS timing of Cell wanted" is set to TRUE:

7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

References

- Conformance requirement 1, 2 and 3: TS 24.030, clause 4.1.1.
- Conformance requirement 4: TS 25.331, clause 8.4.1.3.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.3b.

17.2.4.8.3 Test Purpose

To verify that when the UE receives a REGISTER message, containing a LCS Location Notification Invoke component set to notifyAndVerify-LocationAllowedIfNoResponse, the UE notifies the user of the request and indicates that the default response is location allowed if no response and providing the opportunity to accept or deny the request and sends a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied or permissionGranted as appropriate.

17.2.4.8.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.2. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationAllowed.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.2. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE then sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	Assistance data set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
7	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
7a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 7, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.
7b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 7, this message contains the IE “UE positioning GPS measured results”.
8	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
9	SS			SS starts timer T(LCSN) set to 20 seconds
10	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
11	UE			The user denies the location request within < 20 seconds
12	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
13	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
14	SS			SS starts timer T(LCSN) set to 20 seconds
15	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
16	UE			The user does not reply
17	SS			SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
18	<-		RELEASE COMPLETE	SS terminates the dialogue
19	<-		MEASUREMENT CONTROL	Assistance data set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
20	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).

20a	<-	MEASUREMENT CONTROL	If UE requested additional assistance data in step 20, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.
20b	->	MEASUREMENT REPORT	If UE requested additional assistance data in step 20, this message contains the IE “UE positioning GPS measured results”.
21	SS		SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	**Value/remark**
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	**Value/remark**
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 7 (Option 1) and 7b)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 7 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 7a):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

REGISTER (Step 8)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step 13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 18)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

MEASUREMENT CONTROL (Step 19):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 20 (Option 1) and 20b)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 20 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 20a):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

17.2.4.8.5 Test requirements

After step 4 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionGranted.

After step 6 the UE shall respond with a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

After step 11 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionDenied.

After step 19 the UE shall respond with a MEASUREMENT REPORT message containing the IE “UE positioning GPS measured results”.

17.2.4.9 LCS Mobile terminated location request/ UE-Assisted GPS/ Privacy Verification/ Location Not Allowed if No Response

17.2.4.9.1 Definition

This test case applies to all UEs supporting UE-Assisted GPS Location Service capabilities.

17.2.4.9.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

2) In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component.

3) If the timer expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interpret this by applying the default treatment defined in GSM 03.71 for GSM and TS 23.171 for UMTS (i.e. disallow location if barred by subscription and allow location if allowed by subscription).

4) if the IE "Measurement command" has the value "setup":

   2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

   …

   2> for any other measurement type:

      3> if the measurement is valid in the current RRC state of the UE:

         4> begin measurements according to the stored control information for this measurement identity.

5) The UE shall:

   1> when a measurement report is triggered:

   2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED in case of OTDOA or one satellite included in the variable UE_POSITIONING_GPS_DATA in case of GPS positioning or one cell from the active set in case of CELL ID:

      3> if the IE "Vertical Accuracy" is included:

         4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.

      3> if the IE "Positioning Methods" is set to "GPS":

         4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:

            5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:

               6> if the IE "GPS timing of Cell wanted" is set to TRUE:

                  7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.

                  7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and

                  7> include the IE "Reference SFN" and the IE "UE GPS timing of cell frames".

6> if the IE "GPS timing of Cell wanted" is set to FALSE:

7> include the IE "GPS TOW msec".

5> if the UE does not support the capability to provide the GPS timing of the cell:

6> include the IE "GPS TOW msec".

References

- Conformance requirement 1, 2 and 3: TS 24.030, clause 4.1.1.
- Conformance requirement 4: TS 25.331, clause 8.4.1.3.
- Conformance requirement 5: TS 25.331, clause 8.6.7.19.3.3b.

17.2.4.9.3 Test Purpose

To verify that when the UE receives a REGISTER message, containing a LCS Location Notification Invoke component set to notifyAndVerify-LocationNotAllowedIfNoResponse, the UE notifies the user of the request and indicates that the default response is location not allowed if no response and providing the opportunity to accept or deny the request and sends a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied or permissionGranted as appropriate.

17.2.4.9.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.2. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationNotAllowed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	
7	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
7a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 7, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.
7b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 7, this message contains the IE “UE positioning GPS measured results”.
8	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
9	SS			SS starts timer T(LCSN) set to 20 seconds
10	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
11	UE			The user denies the location request within < 20 seconds
12	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
13	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
14	SS			SS starts timer T(LCSN) set to 20 seconds
15	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
16	UE			The user does not reply
17	SS			SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
18	<-		RELEASE COMPLETE	SS terminates the dialogue
19	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 7 (Option 1) and 7b)

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 7 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 7a):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

REGISTER (Step 8)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step 13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 18)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.4.9.5 Test requirements

After step 4 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionGranted.

After step 6 the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning GPS measured results".

After step 11 the UE shall send a RELEASE COMPLETE message with verificationResponse set to permissionDenied.

During step 17 the UE shall not send any RELEASE COMPLETE message.

17.2.4.10 LCS Mobile terminated location request/ UE-Based or UE-Assisted GPS/ Configuration Incomplete

17.2.4.10.1 Definition

This test case applies to all UEs supporting UE-based but not UE-assisted network assisted GPS, or supporting UE-assisted but not UE-based network assisted GPS.

17.2.4.10.2 Conformance requirements

1) The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the UE. This may be sent either to request verification for MT-LR or to notify about already authorized MT-LR.

2) In the case of location notification no response is required from the MS, the MS shall terminate the dialogue by sending a RELEASE COMPLETE message containing a LocationNotification return result.

3) The UE shall perform the following consistency check:

1> if UE, according to its capabilities, does not support UE-based OTDOA and if IE "Positioning Methods" is set to "OTDOA" and if IE "Method Type" is set to "UE-based":

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if UE, according to its capabilities, does not support UE-based GPS and if IE "Positioning Methods" is set to "GPS" and if IE "Method Type" is set to "UE-based":

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if UE, according to its capabilities, does not support UE-assisted GPS and if IE "Positioning Methods" is set to "GPS" and if IE "Method Type" is set to "UE-assisted":

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if UE, according to its capabilities, does not support UE-based positioning and if IE "Positioning Methods" is set to "OTDOAorGPS" and if IE "Method Type" is set to "UE-based":

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if UE, according to its capabilities, does not support Rx-Tx time difference type 2 measurement and if IE "Positioning Methods" is set to "Cell ID":

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if UE, according to its capabilities, does not support UE GPS timing of cell frames measurement and if IE "GPS timing of Cell wanted" is set to TRUE:

2> set the variable CONFIGURATION_INCOMPLETE to TRUE.

4) If the variable CONFIGURATION_INCOMPLETE is set to TRUE, the UE shall:

1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;

1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS and clear that entry;

1> clear the variable CONFIGURATION_INCOMPLETE;

1> set the cause value in IE "failure cause" to "Configuration incomplete";

1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;

1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;

1> and the procedure ends.

References

- Conformance requirement 1, 2: TS 24.030, clause 4.1.1.
- Conformance requirement 3: TS 25.331, clause 8.6.7.19.1
- Conformance requirement 4: TS 25.331, clause 8.4.1.4a

17.2.4.10.3 Test Purpose

To verify that the UE sends a MEASUREMENT CONTROL FAILURE message, after receiving a MEASUREMENT CONTROL message with IE “Method Type” set a value which is inconsistent with the UE positioning capabilities.

To verify that the UE set the "failure cause" IE to value "configuration incomplete" in the uplink MEASUREMENT CONTROL FAILURE message.

17.2.4.10.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- ~~Satellites: As specified in 17.2.1.2~~

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke component set to notifyLocationAllowed.

The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result.

The SS sends a MEASUREMENT CONTROL message with “Method type” set to a value not supported by the UE as indicated in the “UE positioning capability” contained in the “UE radio access capability”.

The UE sends a MEASUREMENT CONTROL FAILURE message with Failure Cause “Configuration Incomplete”.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE notifies the user of the location request
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	SS			SS verifies that UE does not support both UE-based and UE-assisted GPS
5	<-		MEASUREMENT CONTROL	IE “Method type” is set to a method not supported by the UE Assistance data set as indicated for “Adequate assistance data for UE-assisted A-GPS” in section 17.2.1.3 (for “Method type” set to UE-assisted), or as indicated for the first MEASUREMENT CONTROL message for “Adequate assistance data for UE-based A-GPS” in section 17.2.1.3 (for “Method type” set to UE-based)
6	->		MEASUREMENT CONTROL FAILURE	Failure cause “Configuration Incomplete”
7	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 5):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	Set to a method not supported by the UE
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- Vertical accuracy	~~Set according to 17.2.1.2 (unequal to 0)~~127
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	If “Method type” is set to “UE-based”: Set as specified for the first MEASUREMENT REPORT message in “Adequate assistance data for UE-based A-GPS” in 17.2.1.3 If “Method type” is set to “UE-assisted”: Set as specified in “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL FAILURE (Step 6)

Information Element	Value/remark
RRC transaction identifier	Set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 5
Failure cause	Configuration incomplete

17.2.4.10.5 Test requirements

After step 2 the UE shall send a RELEASE COMPLETE message.

After step 5, the UE shall transmit MEASUREMENT CONTROL FAILURE message, stating the IE "failure cause" as "configuration incomplete". The UE shall not transmit any MEASUREMENT REPORT messages during the execution of this test case.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050015

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1051** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 RRC test case 8.4.1.1
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘ As per **25.331 section 8.6.7.8**:

For the first MEASUREMENT REPORT message, the UE shall:

"Send the MEASUREMENT REPORT as soon as all requested reporting quantities are available according to the requirements and the measurement capabilities set in [19] and [20] for at least one measurement object stored in the variable MEASUREMENT_IDENTITY, but never later than one reporting interval after measurement initiation"

In **34.123-1 section 8.4.1.1.4**, reporting interval for the first MEASUREMENT REPORT message at Step 6 of the expected sequence is not taken care.

As per **34.123-1 section 8.4.1.1.4:**

1) Comments for step 6a of the expected sequence mentions:

"SS shall receive consecutive MEASUREMENT REPORT messages at 64 seconds interval."

But periodical reporting of the measurement report message and reporting interval of the message is already verified at step 6a of the test case. Hence comment at Step 6a is not required.

2) Specific message contents of Measurement Control message at Step 7 specifies intra frequency measurement reporting criteria –> amount of reporting to be infinity. However for Event '1e' in the intra frequency measurement reporting criteria no such IE exits.

Similar is the case for IE "Reporting range constant", "Reporting deactivation

	threshold", "W", "Replacement activation threshold", "Reporting interval".
Summary of change: ⌘	Following changes are made to **34.123-1 section 8.4.1.1.4**: 1. Modified Expected sequence to consider reporting interval at step 5 when UE sends first MEASUREMENT REPORT message at step 6. 2. Removed comments for step 6a of the expected sequence. 3. Modified specific message contents of Measurement Control Message of step 7 to remove unnecessary IE's.
Consequences if not approved: ⌘	Inconsistency will remain between TTCN implementation and 34.123-1.

Clauses affected: ⌘	8.4.1.1.4				
Other specs affected: ⌘	**Y**	**N**		⌘	
		X	Other core specifications		
	X		Test specifications		
		X	O&M Specifications		
Other comments: ⌘	Affects R99, Rel4 and Rel5 UEs				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.4.1.1 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_DCH state (FDD)

8.4.1.1.1 Definition

8.4.1.1.2 Conformance requirement

Upon transition from idle mode to CELL_DCH state:

1> if intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> if the cell in which the UE transited from idle mode is included in the active set for the CELL_DCH state, the UE shall:

3> begin measurement reporting.

2> otherwise:

3> the UE should not begin the measurement reporting. If the UE does not begin the measurement reporting, the measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

In CELL_DCH state, the UE shall:

1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT_IDENTITY are met for any ongoing measurements that are being performed in the UE.

…

The reporting criteria are fulfilled if either:

- a periodic MEASUREMENT REPORT message shall be sent according to the IE "Periodical Reporting Criteria"; or

- an event in stored IE "Measurement reporting criteria" was triggered. Events and triggering of reports for different measurement types are described in detail in clause 14.

For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall:

1> set the IE "measurement identity" to the measurement identity, which is associated with that measurement in variable MEASUREMENT_IDENTITY;

1> set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement stored in variable MEASUREMENT_IDENTITY; and

2> if all the reporting quantities are set to "false":

3> not set the IE "measured results".

1> set the IE "Measured results" in the IE "Additional measured results" according to the IE "reporting quantity" for all measurements associated with the measurement identities included in the "Additional measurements list" stored in variable MEASUREMENT_IDENTITY of the measurement that triggered the measurement report; and

2> if one or more additional measured results are to be included:

3> include only the available additional measured results, and sort them in ascending order according to their IE "measurement identity" in the MEASUREMENT REPORT message.

1> if the MEASUREMENT REPORT message was triggered by an event (i.e. not a periodical report):

…

The UE shall:

1> transmit the MEASUREMENT REPORT message on the uplink DCCH using either AM or UM RLC according to the stored IE "measurement reporting mode" associated with the measurement identity that triggered the report.

When the MEASUREMENT REPORT message has been submitted to lower layers for transmission:

1> the procedure ends.

…

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in TS 25.331 subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

….

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":

…

2> for measurement type "UE positioning measurement":

…

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

1> if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:

5> if the UE is in CELL_FACH state:

6> the UE behaviour is not specified.

4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

2> for any other measurement type:

3> resume the measurements according to the new stored measurement control information.

1> if the IE "measurement command" has the value "release":

2> terminate the measurement associated with the identity given in the IE "measurement identity";

2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

If the IE "Reporting Cell Status" is not received for intra-frequency, inter-frequency measurement, or inter-RAT measurement, the UE shall:

1> for intra-frequency measurement, inter-frequency measurement and inter-RAT measurement:

2> exclude the IE "Measured Results" in MEASUREMENT REPORT.

NOTE: The IE "Reporting Cell Status" within "Event Criteria List" defines whether "Cell Measured Results" is present for event-based reporting.

The IE "Reporting Cell Status" is not included in System Information Block 11/12 for periodic intra-frequency measurements. In this case the UE shall assume the default values "Report cells within active set and/or monitored set on used frequency " and "6".Reference

3GPP TS 25.331 clause 8.4.1.8.1, 8.4.1.3, 8.4.2.2, 8.6.7.9.

8.4.1.1.3 Test Purpose

1. To confirm that the UE continues to monitor intra-frequency measurement quantity of the cells listed in System Information Block type 11 or 12 messages, after it has entered CELL_DCH state from idle mode. When the intra-frequency measurement reporting criteria specified in System Information Block type 11 or 12 messages have been met, it shall report the measurements using MEASUREMENT REPORT message(s).

2. To confirm that the UE terminates monitoring and reporting activities for the cells listed in "intra-frequency cell info list" IE in System Information Block type 11 or 12 messages, after it has received a MEASUREMENT CONTROL message that specifies the measurement type to be "intra-frequency measurement" with the same measurement identity as in System Information Block Type 11 or 12 messages. To confirm that the UE reconfigures the monitoring and reporting activities based on the last MEASUREMENT CONTROL message received.

8.4.1.1.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, Cell 2 and Cell 3 are active.

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.1-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.1-1

Parameter	**Unit**	**Cell 1**			**Cell 2**			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch.1		
CPICH Ec	dBm/3.84 MHz	-60	-60	-60	-70	-60	-80	-80	-60	-60

The UE is initially in idle mode and has selected cell 1 for camping. The System Information Block type 11 messages are modified with respect to the default settings. The key measurement parameters in the modified System Information Block message are as follow: report criteria = "periodic reporting criteria", reporting interval = "64 seconds".

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). Next SS and UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service). The UE shall send a MEASUREMENT REPORT message after reaching CELL_DCH state, reporting cell 2's CPICH RSCP value. After 64 seconds has passed since SS receives the first MEASUREMENT REPORT message, the UE shall transmit a second MEASUREMENT REPORT message.

Note: In P11 or P13 in step 4, in RADIO BEARER SETUP message, IE "Default DPCH Offset Value" and IE "DPCH frame offset" are set to "0".

SS sends a MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS configures an intra-frequency measurement based on the measurement quantity CPICH RSCP. Parameters used in this message are: measurement identity = "1", report criteria = "event-trigger", event identity = "1e", reporting threshold = "-70 dBm". SS checks to see that no MEASUREMENT REPORT messages are sent within the next 64 seconds (which is due to periodic reporting). SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.1-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the CPICH RSCP of cell 3 has risen above the threshold value specified in the previous MEASUREMENT CONTROL message.

SS sends then a new MEASUREMENT CONTROL message to add cell 2 to the list of the cells the UE shall measure. Since the RSCP for cell 2 is above the threshold for event 1e to be triggered, a MEASUREMENT REPORT triggered by cell 2 shall be sent by the UE.

SS reconfigures the downlink transmission power settings according to values in column "T2" in table 8.4.1.1-1. SS sends a new MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS configures an intra-frequency measurement based on the measurement quantity CPICH RSCP. Parameters used in this message are: measurement identity = "1", report criteria = "event-trigger", event identity = "1a", Reporting range 8db. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.1-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the condition for event 1a is fulfilled. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		System Information Block type 11	The UE is in idle mode and camped onto cell 1. The System Information Block type 11 messages to be transmitted are different from the default settings (see specific message contents)
2	↔		SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
3	↔		SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4	↔		SS executes procedure P11 (clause 7.4.2.5.2) or P13 (clause 7.4.2.6.2) specified in TS 34.108.	IE "Default DPCH Offset Value" and IE "DPCH frame offset " in RADIO BEARER SETUP message is set to "0".
5	SS			SS shall wait for a MEASUREMENT REPORT message. This MEASUREMENT REPORT shall be received on or before 64 Seconds.

Step	Direction		Message	Comment
	UE	SS		
6	→		MEASUREMENT REPORT	After receiving this message, SS shall expect to receive the next MEASUREMENT REPORT message after 64 seconds.
6a	→		MEASUREMENT REPORT	~~SS shall receive consecutive MEASUREMENT REPORT messages at 64 seconds interval.~~
7	←		MEASUREMENT CONTROL	A measurement with "measurement identity" IE set to "1" is assigned, with the IE "CHOICE reporting criteria" set to "intra-frequency measurement reporting criteria". See specific message content for the rest of the message.
8				SS waits for 64 seconds and verifies that no further MEASUREMENT REPORT messages are detected on the uplink DCCH.
9				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.1-1.
10	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 3 and containing report the measured CPICH RSCP value of cell 3.
10a	←		MEASUREMENT CONTROL	A MEASUREMENT CONTROL is sent to the UE to modify the list of the cells the UE shall monitor.
10b	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 2.
11				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.1-2.
12	←		MEASUREMENT CONTROL	A measurement with "measurement identity" IE set to "1" is assigned, with the IE "CHOICE reporting criteria" set to "intra-frequency measurement reporting criteria". See specific message content for the rest of the message.
13				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.1-3 and waits 5 seconds.
14	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message to report occurrence of event 1a.
15	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

System Information Block type 11 (Step 1)

Use the same System Information Block Type 11 message as found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present Absence of this IE is equivalent to default value 1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection	Not Present (The IE shall be absent as this is the serving cell)
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	1024
- Read SFN Indicator	TRUE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present For neigbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64 seconds

MEASUREMENT REPORT (Step 6 and 6a)

Note 1: The Cell measured results for Cell 1 may or may not be present.

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	See Note 1
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1 (if present)
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	"Checked to see if set to within an acceptable range"
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event Results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement objects list	
- CHOICE intra-frequency cell removal	Remove all intra-frequency cells
- New intra-frequency cells	2 new intra-frequency cells
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	256 chips
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- CHOICE Mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not Present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1e
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
~~- Reporting range constant~~	~~Not Present~~
~~- Cells forbidden to affect reporting range~~	~~Not Present~~
~~- W~~	~~Not Present~~
- Hysteresis	1 dB
- Threshold used frequency	-70 dBm

~~- Reporting deactivation threshold~~	~~Not Present~~
~~- Replacement activation threshold~~	~~Not Present~~
- Time to trigger	0 ms
~~- Amount of reporting~~	~~Infinity~~
~~- Reporting interval~~	~~Not Present~~
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 10)

Note 1: Cell measured results for cells 1 and 3 may appear in either order (i.e. cell 1 then cell 3 or cell 3 then cell 1)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	See Note 1
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is present
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Intra-frequency measurement event results"
- Intra-frequency event identity	Check to see if this IE is set to "1e"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3

MEASUREMENT CONTROL (Step 10a)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	1 new intra-frequency cell
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- Reporting cell status	Not Present
- Measurement validity	Not Present
- CHOICE report criteria	Not Present

MEASUREMENT REPORT (Step 10b)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important)
- Cell measured results	(for cell 1)
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is present
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	(for cell 2)
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference may or may not be included in it.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	(for cell 3)
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Intra-frequency measurement event results"
- Intra-frequency event identity	Check to see if this IE is set to "1e"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 12)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove all intra-frequency cells
- New intra-frequency cells	2 new intra-frequency cells
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not Present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1a
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
- Reporting range constant	8 dB
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	1
- Replacement activation threshold	Not Present
- Time to trigger	5000 msec

- Amount of reporting	Infinity
- Reporting interval	16 s
- Reporting cell status	Not Present
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 14)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	
- CHOICE event result	
- Intra-frequency event identity	Check to see if this IE is set to "1a"
- Cell measured event results	
- CHOICE mode	Check to see if this IE is set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2

8.4.1.1.5 Test Requirement

After step 5 the UE shall start to transmit 2 MEASUREMENT REPORT messages at 64 seconds interval. The measurement quantity "CPICH RSCP" of cell 2 shall be reported in these messages.

After step 7 the UE shall not transmit any MEASUREMENT REPORT messages within 64 seconds after SS has transmitted the MEASUREMENT CONTROL message in step 7.

After step 9 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, to report that the CPICH RSCP value for cell 3 has risen above the threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 7. This MEASUREMENT REPORT message shall also contain IE "Event results", indicating the triggering of event '1e' by cell 3. It shall also contain the measured CPICH RSCP value and cell synchronisation information for cell 3, and the measured CPICH Ec/No and RSCP values for cell 1.

After step 10a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report that the CPICH RSCP value for cell 2 has risen above the threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 10a. The MEASUREMENT REPORT message shall contain the measured CPICH RSCP value and cell synchronisation information for cell 2 and cell 3, as well as the measured CPICH Ec/No and RSCP for cell 1. The IE "Event results" in this message shall indicate that cell 2 has triggered the event.

After step 13, the UE shall transmit a MEASUREMENT REPORT message containing IE "Event results", indicating the triggering of event '1a' by cell 2. The MEASUREMENT REPORT message shall not contain any measured results.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050016

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1052 ⌘**rev** - ⌘ Current version: **5.10.0** ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 3 RRC test case 8.4.1.37
Source:	⌘	Anite
Work item code:	⌘	N/A
Date:	⌘	24/01/2005
Category:	⌘	**D**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	As per the expected sequence, message specific content for Measurement Report and Test Requirements the UE transmitted power should be below –50 dBm However as per 25.133 section **9.1.6.2**, the reporting range for the UE transmitted power is -50 to +33 dBm. Thus in the UE measurements, the UE will report only a value of -50 dBm. (In the actual measurement report -50 translates to 21, **Table 9.15 of 25.133**).
Summary of change:	⌘	The UE minimum power is changed from 'below –50 dBm' to ' equal to –50 dBm' in the specific message content for Measurement Report message at step 4. Note: Changes are made for the FDD measurement reports.
Consequences if not approved:	⌘	The testcase will fail a conformant UE

Clauses affected:	⌘	8.4.1.37.4, 8.4.1.37.5

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.4.1.37 Measurement Control and Report: UE internal measurement, event 6c

8.4.1.37.1 Definition

8.4.1.37.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the UE Tx power reaches its minimum value.

Reference

3GPP TS 25.331 clause 14.6.2.3.

8.4.1.37.3 Test Purpose

1. To confirm that the UE sends a measurement report for event 6c when the UE Tx power reaches its minimum value when event 6c has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.37.4 Method of test

Initial Condition

System simulator: 1 UTRAN cell.
UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108.
The SS sends a MEASUREMENT CONTROL message to the UE that configures event 6c.
For FDD and 1.28 Mcps TDD: The SS sends TPC_cmd equal to -1 until the transmitter power of the UE reaches its minimum value.
For 3.84 Mcps TDD: The SS sets the ISCP reported for the timeslot containing the uplink DPCH to the minimum reportable value (< -120)
SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS configures event 6c in the UE.
3	←			For FDD and 1.28 Mcps TDD: The SS sends TPC_cmd equal to -1 until the transmitter power of the UE reaches its minimum value, which shall be below –50 dBm.
3a	←			For 3.84 Mcps TDD: The SS sets the ISCP reported for the timeslot containing the uplink DPCH to the minimum reportable value (< -120)
4	→		MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to SS triggered by event 6c.
5	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific message content

MEASUREMENT CONTROL (Step 2) (FDD)

Information Element	Value/remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- UE internal measurement	
- UE internal measurement quantity	UE Transmitter Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted power	TRUE
CHOICE mode	
- UE Rx-Tx time difference	FALSE
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	event 6c
- Time to trigger	0

MEASUREMENT CONTROL (Step 2)(1.28 Mcps TDD)

Information Element	Value/remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event trigger
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- CHOICE *mode*	TDD
- measurement quantity	UE Transmitter Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted power	TRUE
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- T_{ADV} info	FALSE
- CHOICE report criteria	UE internal measurement reporting criteria
- Parameters sent for each UE internal measurement event	
- UE internal event identity	6c
- Time to trigger	0

MEASUREMENT CONTROL (Step 2) (3.84 Mcps TDD)

Information Element	Value/remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event trigger
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- CHOICE *mode*	TDD
- measurement quantity	UE Transmitter Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted power	TRUE
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Applied TA	FALSE
- CHOICE report criteria	UE internal measurement reporting criteria
- Parameters sent for each UE internal measurement event	
- UE internal event identity	6c
- Time to trigger	0

MEASUREMENT REPORT (Step 4) (FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "UE internal measurement"
- UE internal measured results	
- UE Transmitted Power	Check that this IE is set a value that is ~~below~~ equal to –50 dBm.
- UE Rx-Tx report entities	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6c
CHOICE *mode*	
Primary CPICH info	This IE should not be included

MEASUREMENT REPORT (Step 4) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "UE internal measured results "
-CHOICE *mode*	Check to see if set to TDD
- UE Transmitted Power	Check that this IE is set a value that is below –49 dBm.
- CHOICE TDD option	Check to see if set to"1.28 Mcps TDD"
- T_{ADV}	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6c

MEASUREMENT REPORT (Step 4) (3.84 Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "UE internal measured results "
-CHOICE *mode*	Check to see if set to TDD
- UE Transmitted Power	Check that this IE is set a value that is below –45 dBm.
- CHOICE TDD option	Check to see if set to"3.48 Mcps TDD"
- Applied TA	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6c

8.4.1.37.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6c when its transmit power has reached its minimum output power. The minimum transmitted power of the UE shall be less than –50dBm.(for FDD), -49dBm (for 1.28 Mcps TDD), and -45dBm (for 3.84 Mcps TDD)

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, 31st Jan – 4th Feb, 2005

Tdoc ⌘ T1-050017

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1053 ⌘ **rev** - ⌘ Current version: **5.10.0** ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 3 RRC test case 8.1.2.10
Source:	⌘	Anite
Work item code:	⌘	N/A
Date:	⌘	24/01/2005
Category:	⌘	**D**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Specific Message Content in 34.123-1 section 8.1.2.10.4 for RRC CONNECTION REQUEST and RRC CONNECTION SETUP mentions Step 2 and Step 3 of the expected sequence. However it should be mentioned as Step 1 and Step 2.
Summary of change:	⌘	The specific message contents for the RRC CONNECTION REQUEST and the RRC CONNECTION SETUP message has been changed as Step 1 and Step 2
Consequences if not approved:	⌘	Mismatch will remain between the Expected Sequence and the Specific Message Contents.

Clauses affected:	⌘	8.1.2.10.4
Other specs affected:	⌘	Y N ☐ ☒ Other core specifications ☐ ☒ Test specifications ☐ ☒ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION>

8.1.2.10 RRC connection establishment in CELL_DCH on another frequency

8.1.2.10.1 Definition

8.1.2.10.2 Conformance requirement

1. The UE shall, in the transmitted RRC CONNECTION REQUEST message:
   1> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

   1> set the IE "Initial UE identity" to the value of the variable INITIAL_UE_IDENTITY;

   1> set the IE "Protocol error indicator" to the value of the variable PROTOCOL_ERROR_INDICATOR;

   1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 11; and

   1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported; and

   1> take care that the maximum allowed message size is not exceeded when forming the IE "Measured results on RACH".

   ….

2. The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

   …

If the values are identical, the UE shall:

   …

   1> if the UE, according to subclause 8.6.3.3, will be in the CELL_DCH state at the conclusion of this procedure:

      2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

Reference

3GPP TS 25.331 clauses 8.1.3.3, 8.1.3.6

8.1.2.10.3 Test Purpose

To confirm that the UE manages to establish an RRC CONNECTION on another frequency when so required by SS in the RRC CONNECTION SETUP message.

8.1.2.10.4 Method of test

Initial condition

System simulator: 2 cells – Cell 1 on UARFCN 1 and Cell 4 on UARFCN 4.
UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial state shall be "Registered idle mode on CS/PS" (state 7).

Specific Message Content

For system information block 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency reporting quantity for RACH reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE mode	FDD
- Reporting quantity	CPICH Ec/No
- Maximum number of reported cells on RACH	Current Cell
- Reporting information for state CELL_DCH	Not present

System Information Block type 11 (TDD)

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
- SIB12 indicator	FALSE
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- New inter-frequency cell id	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to table 6.1 of TS34.108 for Cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	Reference clause 6.1,TS34.108,Default settings for cell 4
- Cell parameters ID	Reference clause 6.1,TS34.108,Default settings for cell 4
- Primary CPICH TX power	Not present
- Timeslot list	Not present
- Cell Selection and Re-selection Info	Not present For neigbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.
- $Qoffset1_{s,n}$	0dB
- Maximum allowed UL TX power	Reference to table 6.1.6, TS 34.108
- HCS neighbouring cell information	Not present
- CHOICE mode	TDD
- Qrxlevmin	Reference to table 6.1.6, TS 34.108
- Cells for measurement	Not present

Test procedure

The UE is initially in idle mode and is camping on cell 1. SIB 11 is broadcast in cell 1.
SS prompts the operator to make an outgoing call of a supported traffic class. The UE shall transmit an RRC CONNECTION REQUEST on the CCCH, and SS replies with the RRC CONNECTION SETUP, in which the IEs are set as described below. The UE shall send the RRC CONNECTION SETUP COMPLETE back to SS in cell 4 on the DPCH described in the RRC CONNECTION SET UP messsage received from the SS. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		RRC CONNECTION REQUEST	By outgoing call operation
2	←		RRC CONNECTION SETUP	Indicating frequency of cell 4 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 4 for FDD.
3				The UE configures the layer 2 and layer 1.
4	→		RRC CONNECTION SETUP COMPLETE	This message is sent to SS on the frequency indicated in the RRC CONNECTION SETUP message
5	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific message content

All messages indicated below shall use the same content as found in TS 34.108 clause 6.1 with the following exceptions:

RRC CONNECTION REQUEST (Step ~~2~~ 1) (FDD)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Measured results on RACH	Check that the Ec/No for the cell 1 is reported.

RRC CONNECTION REQUEST (Step ~~2~~ 1) (TDD)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Measured results on RACH	Check that the P-CCPCH RSCP for the cell 1 is reported.

RRC CONNECTION SETUP (Step ~~3~~ 2) (FDD)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 Not present UARFCN downlink of cell 4 Set to same code as used for cell 4

RRC CONNECTION SETUP (Step ~~3~~ 2) (TDD)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Frequency info - UARFCN(Nt)	 UARFCN of the cell 4

8.1.2.10.5 Test requirement

In step 4, the UE shall send the RRC CONNECTION SETUP COMPLETE message on the frequency indicated in the RRC CONNECTION SETUP message.

<END OF MODIFIED SECTION>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2005

Tdoc ⌘T1-050023

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1055 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 RRC test case 8.1.2.2
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	As per **34.123-1 section 8.1.2.2.4** message specific content for System Information block 5, channelisation code for AICH in second PRACH information should be 4. However in the TTCN implementation it is set as 13. Note: This CR aligns Prose to TTCN implementation.
Summary of change:	⌘	In message specific content for System Information block 5, Channelisation code for AICH in second PRACH information is changed from 4 to 13.
Consequences if not approved:	⌘	Inconsistency will remain between 34.123-1 and TTCN implementation.

Clauses affected:	⌘	8.1.2.2.4

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	Affects Rel 99, Rel4 and Rel5 UEs.

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Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.1.2.2 RRC Connection Establishment: Success after T300 timeout

8.1.2.2.1 Definition

8.1.2.2.2 Conformance requirement

If the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY; and

if expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

2> if V300 is greater than N300:

…

Reference

3GPP TS 25.331 clause 8.1.3.5.

8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

8.1.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell. SCCPCH configuration as specified in 6.1.1 of TS 34.108.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

NOTE: This test requires that N300 is bigger than 0, which is the case (see default contents of SIB 1, specified in TS 34.108). Expiry of timer T300 is verified only for N300 values exceeding 1.

Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1, SYSTEM INFORMATION BLOCK TYPE 5 and SYSTEM INFORMATION BLOCK TYPE 7 message are modified and this modification is notified to the UE. An internal counter K in SS is initialized to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits an RRC CONNECTION SETUP message containing an IE “RRC state indicator” set to ‘CELL_PCH’ as specified in step 6 to the UE. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
1a				SS waits 5s (to ensure that the UE waits for the new value tag before re-reading system information)
1b	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1 SYSTEM INFORMATION BLOCK TYPE 5 SYSTEM INFORMATION BLOCK TYPE 7	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 1 , SIB TYPE 5 and SIB 7messages. See specific message contents.
1c				SS waits 5s (to ensure that the UE has time to read the new system information)
2				SS initializes counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3	→		RRC CONNECTION REQUEST	See the clause 9 in TS 34.108 on default message content
4				SS increments K.
5				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 3.
6	←		RRC CONNECTION SETUP	IE “RRC state indicator” is set to ‘CELL_PCH’.
7	→		RRC CONNECTION REQUEST	See specific message contents.
8	←		RRC CONNECTION SETUP	This is a legal message. See the clause 9 in TS 34.108 on default message content for RRC.
9				The UE configures the layer 1 and layer 2.
10	→		RRC CONNECTION SETUP COMPLETE	See clause 9 in TS 34.108 on default message content

Specific Message Contents

PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	
Paging record list	Not present
BCCH modification info	
- MIB Value Tag	Set to (Current MIB value tag + 1)
- BCCH Modification time	Not Present

SYSTEM INFORMATION TYPE 1 (Step 1b)

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

- UE Timers and constants in idle mode	
-T300	2000 milliseconds
-N300	3
-T312	10 seconds
- N312	1

SYSTEM INFORMATION TYPE 5 (Step 1b) - (FDD)

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- SIB6 indicator	FALSE
- PICH Power offset	-5 dB
- CHOICE Mode	FDD
- AICH Power offset	-5 dB
- Primary CCPCH info	Not present
- PRACH system information list	
- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	0
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	11
- Gain factor ßd	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD

Information Element	Value/remark
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	–10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	1
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	31
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360

Information Element	Value/remark
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0 dB
- CTFC information	1
- Reference TFC ID	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	11
- Gain factor ßd	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)

Information Element	Value/remark
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	–10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	~~4~~ 13
- STTD indicator	FALSE
- AICH transmission timing	0

SYSTEM INFORMATION TYPE 5 (Step 1b) – 3.84 Mcps TDD

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark

Information Element	Value/remark
- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/1
- Channelisation Code	8/2
- Channelisation Code	8/3
- Channelisation Code	8/4
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD

Information Element	Value/remark
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/5 where i denotes an unassigned code
- Channelisation Code	8/6 where i denotes an unassigned code
- Channelisation Code	8/7 where i denotes an unassigned code
- Channelisation Code	8/8 where i denotes an unassigned code
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD

Information Element	Value/remark
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

SYSTEM INFORMATION TYPE 5 (Step 1b) – 1.28 Mcps TDD

Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- $PRX_{UpPCHdes}$	10
- Power Ramping Step	3
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/1
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	6
- Channelisation code	16/16
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	½
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)

Information Element	Value/remark
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- $PRX_{UpPCHdes}$	10
- Power Ramping Step	1
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/2
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD

Information Element	Value/remark
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	An available down-link timeslot
- Channelisation code	16/15
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	½
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	

Information Element	Value/remark
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

Contents of System Information Block type 7 (FDD) – (Step 1b)

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

- PRACHs listed in system information block type5	
- Dynamic persistence level	(2,2)
- PRACHs listed in system information block type6	Not present

RRC CONNECTION SETUP (Step 6)

SS sends a message containing an invalid rrc State Indicator

Information Element	Value/remark
RRC state indicator	CELL_PCH

RRC CONNECTION REQUEST (Step 7)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Protocol Error Indicator	Check to see if set to TRUE

8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step 6 the UE shall re-send another RRC CONNECTION REQUEST message.

After step 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, 31st Jan – 4th Feb, 2005

Tdoc ⌘ T1-050024

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1056** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 RRC test case 8.4.1.26
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘ **Section 8.4.1.26.4 of 34.123-1** mentions the downlink power to be applied for Cell A at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" are to be applied subsequently. But downlink power to be applied for cell A in columns marked 'T1' (-85db) is well above the threshold set by Measurement Control message and can cause UE to loose Sync with SS.

As per Section 14.2.1.4 of 25.331 the equation need to be satisfied to trigger event 2d is as below:

$$Q_{Used} \leq T_{Used2d} - H_{2d}/2$$

In case of 8.4.1.26, T_{Used2d} is given as –70 db and H_{2d} is given as 1 db, hence any value less than –71db should be able to trigger Event 2d. Down link power settings for Cell A at 'T1' should be changed to –75 db to make the test case more reliable.

Summary of change: ⌘ Following change is made to **34.123-1** section **8.4.1.26.4**:

1) Downlink power to be applied for cell A in Column marked 'T1' are changed to –75db.

Consequences if not approved: ⌘ Test case may fail a conformant UE.

Clauses affected: ⌘ 8.4.1.26.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
		X		Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.4.1.26 Measurement Control and Report: Measurement for events 2D and 2F

8.4.1.26.1 Definition

8.4.1.26.2 Conformance requirement

When event 2d is configured in the UE within a measurement, the UE shall:

1> if equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

2> if the variable TRIGGERED_2D_EVENT is set to FALSE:

3> set the variable TRIGGERED_2D_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "inter-frequency event results": "inter-frequency event identity" to "2d" and no IE "Inter-frequency cells";

4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2.

1> if the variable TRIGGERED_2D_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

2> set the variable TRIGGERED_2D_EVENT to FALSE.

Triggering condition:

Equation 1:

$$Q_{Used} \leq T_{Used\ 2d} - H_{2d} / 2$$

The variables in the formula are defined as follows:

$\boldsymbol{Q_{Used}}$ is the quality estimate of the used frequency.

$\boldsymbol{T_{Used\ 2d}}$ is the absolute threshold that applies for the used frequency and event 2d.

$\boldsymbol{H_{2d}}$ is the hysteresis parameter for the event 2d.

Leaving triggered state condition:

Equation 2:

$$Q_{Used} > T_{Used\ 2d} + H_{2d} / 2$$

The variables in the formula are defined as follows:

$\boldsymbol{Q_{Used}}$ is the quality estimate of the used frequency.

$\boldsymbol{T_{Used\ 2d}}$ is the absolute threshold that applies for the used frequency and event 2d.

$\boldsymbol{H_{2d}}$ is the hysteresis parameter for the event 2d.

…

When event 2f is configured in the UE within a measurement, the UE shall:

1> if equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":

2> if the variable TRIGGERED_2F_EVENT is set to FALSE:

3> set the variable TRIGGERED_2F_EVENT to TRUE;

3> send a measurement report with IEs set as below:

4> set in "inter-frequency event results": "inter-frequency event identity" to "2f", and no IE "Inter-frequency cells";

4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2.

1> if the variable TRIGGERED_2F_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:

2> set the variable TRIGGERED_2F_EVENT to FALSE.

Triggering condition:

Equation 1:

$$Q_{Used} \geq T_{Used\ 2f} + H_{2f} / 2$$

The variables in the formula are defined as follows:

$\boldsymbol{Q_{Used}}$ is the quality estimate of the used frequency.

$\boldsymbol{T_{Used\ 2f}}$ is the absolute threshold that applies for the used frequency and event 2f.

$\boldsymbol{H_{2f}}$ is the hysteresis parameter for the event 2f.

Leaving triggered state condition:

Equation 2:

$$Q_{Used} < T_{Used\ 2f} - H_{2f} / 2$$

The variables in the formula are defined as follows:

$\boldsymbol{Q_{Used}}$ is the quality estimate of the used frequency.

$\boldsymbol{T_{Used\ 2f}}$ is the absolute threshold that applies for the used frequency and event 2f.

$\boldsymbol{H_{2f}}$ is the hysteresis parameter for the event 2f.

Reference

3GPP TS 25.331 clause 14.2.1.4, 14.2.1.6

8.4.1.26.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message when event 2F is configured and estimated quality of the currently used frequency is above the value of the IE "Threshold used frequency".
2. To confirm that the UE sends MEASUREMENT REPORT message when event 2D is configured and estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency".

8.4.1.26.4 Method of test

Initial Condition

System Simulator: 1 cells – The initial configurations of the cell in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.26-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.4.1.26-1 illustrates the downlink power to be applied for the cell at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" is to be applied subsequently. The exact instant on which these values shall be applied is described in the text in this clause.

Table 8.4.1.26-1

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm /3.84 MHz	-55	-~~85~~ 75
P-CCPCH RSCP(TDD)	dBm	-60	-80

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform Inter-frequency measurements and report event 2D and/or event 2F by sending MEASUREMENT CONTROL message. Since quality estimate of used frequency is above threshold, the UE sends MEASUREMENT REPORT message indicating event 2F. SS then configures itself according to the values in columns "T1" shown above. Quality estimate for used frequency is now below threshold, the UE sends MEASUREMENT REPORT message to report it. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3			Void	
4	←		MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2D and 2F.
5	→		MEASUREMENT REPORT	The UE shall report event 2F
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.26-1.
7	→		MEASUREMENT REPORT	The UE shall report event 2D.
8	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 4) (FDD)

Information Element	Value/remark
Measurement identity	10
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Any valid identity other than that of Cell 1
- Frequency Information	Any valid frequency other than that of Cell 1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Any value of Primary scrambling code
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2D
- Used frequency threshold	-70 dBm
- Used frequency W	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Inter-frequency event identity	2F
- Used frequency threshold	-70 dBm
- Used frequency W	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 4) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	10
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Any valid identity other than that of Cell 1
- Frequency Information	Any valid frequency other than that of Cell 1
- Cell info	
- Cell individual offset	0
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	
- CHOICE Mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell parameters ID	Any value of Cell parameters ID
- SCTD indicator	FALSE
- Primary CCPCH TX power	Not present
- Timeslot list	Not present
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	4
- CHOICE mode	TDD
- Measurement quantity for frequency quality estimate	P-CCPCH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN reporting indicator	FALSE
- Primary CCPCH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2D
- Threshold used frequency	-70 dBm
- W used frequency	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Report cells within active set
- Maximum number of reported cells	2
- Inter-frequency event identity	2F
- Threshold used frequency	-70 dBm
- W used frequency	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Report cells within active set
- Maximum number of reported cells	2
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 4) (3.84 Mcps TDD)

Information Element	Value/remark
Measurement identity	10
Measurement command	Setup
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Any valid identity other than that of Cell 1
- Frequency Information	Any valid frequency other than that of Cell 1
- Cell info	
- Cell individual offset	0
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	
- CHOICE Mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Cell parameters ID	Any value of Cell parameters ID
- SCTD indicator	FALSE
- Primary CCPCH TX power	Not present
- Timeslot list	Not present
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	4
- CHOICE mode	TDD
- Measurement quantity for frequency quality estimate	P-CCPCH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN reporting indicator	FALSE
- Primary CCPCH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Measurement validity	CELL_DCH state
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2D
- Threshold used frequency	-70 dBm
- W used frequency	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Report cells within active set
- Maximum number of reported cells	2
- Inter-frequency event identity	2F
- Threshold used frequency	-70 dBm
- W used frequency	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Report cells within active set
- Maximum number of reported cells	2
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5) (FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- Inter-frequency event identity	2F

MEASUREMENT REPORT (Step 5)(TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	
- CHOICE event results	Check to see if set to Inter-frequency measurement event results,
- Inter-frequency event identity	Check to see if set to 2F

MEASUREMENT REPORT (Step 7) (FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results,
- Inter-frequency event identity	2D

MEASUREMENT REPORT (Step 7)(TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	
- CHOICE event results	Check to see if set to Inter-frequency measurement event results,
- Inter-frequency event identity	Check to see if set to 2D

8.4.1.26.5 Test Requirement

1. In step 5 the UE shall send MEASUREMENT REPORT message indicating event 2F.
2. In step 7 the UE shall send MEASUREMENT REPORT message indicating event 2D.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2005

Tdoc ⌘T1-050025

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1057** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to default contents of System Information Block 3 and 4 for Idle Mode test cases
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	TS **25.331 section 10.3.2.1** specifies the following requirements for the setting of the IEs "Intra-frequency cell re-selection indicator" and "Tbarred" in SIB 3 and SIB 4: "The IE is mandatory present if the IE "Cell Barred" has the value "Barred"; otherwise the element is not needed in the message." 1) TS **34.123-1 Table 6.1** indicates that the IE "Intra-frequency cell re-selection indicator" should be set to "Allowed". However, this IE will be set only if the Cell is Barred. 2) TS **34.123-1 section 6.1.1.7.4** Initial Conditions states that the "Intra-frequency cell re-selection indicator" IE should be set to "Allowed". However, as in this test case none of the cells are barred the default value as specified in TS 34.108 section 6.1.1 can be used for this IE.
Summary of change:	⌘	1) In the table 6.1 for the IE "Intra-frequency cell re-selection indicator" added a comment mentioning this IE is "Present in case Cell is barred". 2) Removed the reference to the IE "Intra-frequency cell re-selection indicator" from section 6.1.1.7.4 Initial Conditions.
Consequences if not approved:	⌘	Inconsistency will remain between 34.123-1 and core specifications.

Clauses affected:	⌘	Section 6			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects Rel 99, Rel4 and Rel5 UEs.			

How to create CRs using this form:

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

6 Idle mode operations

In the following paragraphs some explanatory text is given concerning the nature of the tests in this clause and the general behaviour of the SS is described.

Since the conformance requirements of most of the tests in this clause cannot be tested explicitly, testing is done implicitly by testing the UE behaviour from its responses to the SS.

In some cases, a test is performed in multiple stages in order that the requirements can be tested within the above constraints.

For any UE all the carriers are in its supported band(s) of operation.

Unless otherwise stated in the method of test, in all of the tests of this clause:

- the default values of the system information data fields given in TS 34.108 are used;
- the UE is equipped with a USIM containing default values. The USIM is in the idle updated state in the default location area with a TMSI assigned at the beginning of each test;
- default cell numbering as defined in TS 34.108 clause 6.1 have been used in the cell selection and re-selection test cases;
- the cells shall be configured such that Squal>0 (FDD only) and Srxlev>0 while applying Qqualmin (FDD only) and Qrxlevmin in table 6.1. In addition, for an FDD cell, the measured primary CPICH RSCP value shall be greater than or equal to -95 dBm (definition of High Quality cell, see TS 25.304, clause 5.1.2.2). In addition, for a TDD cell, the measured P-CCPCH RSCP shall be greater than or equal to –84 dBm (definition of High Quality cell, see TS 25.304, clause 5.1.2.2).

Three different methods A, B and C are applied in the tests:

Method A:

- the SS is continuously paging the UE on all cells at the start of the test and does not respond to RACH requests from the UE (which causes a cell reselection). Where a test specifies that the UE is not paged on a particular cell, only idle paging is transmitted. This method is similar to the one used in TS 51.010-1, clause 20.

Method B:

- the SS is continuously paging the UE on all cells at the start of the test and responds to RACH requests from the UE with an IMMEDIATE ASSIGNMENT REJECT (GERAN cell) or RRC CONNECTION REJECT (UTRAN cell) message which causes the UE to return to Idle mode. Where a test specifies that the UE is not paged in a particular cell, only idle paging is transmitted.

Method C:

- no continuously paging as in method A or B. Normal response to RACH requests so Location Updating and Calls can be done.

In case a test specifies that UE shall read System Information on BCCH while camped on a UTRAN cell, SS shall notify UE on the BCCH modification by sending a PAGING TYPE 1 message to UE. This message shall contain IE BCCH Modification Info with the following settings:

Information Element	Value/remark
BCCH modification info	
MIB Value Tag	Set to the same value as the value tag of the MIB after the BCCH modification
BCCH Modification time	Not present

Table 6.1: Default values of the system information fields

Parameter	Setting
IMSI attach/detach	Method A, B: Not allowed Method C: Allowed
Intra-frequency cell re-selection indicator	Set to a~~A~~llowed if IE Cell Barred is set to barred; otherwise this IE Not Present
Cell_selection_and_reselection_quality_measure	CPICH RSCP (FDD)
Qqualmin (FDD only)	-24 dB
Qrxlevmin (FDD)	-115 dBm
Qrxlevmin (TDD)	-103 dBm
DRX cycle length	1,28 s

For a UE camping in a FDD cell, CPICH_Ec/Io and SCH_Ec/Io shall fulfill requirements in TS 25.133, clause 8.1.2.2.1: The UE is able to identify a new detectable cell belonging to the monitored set within $T_{identify\ intra}$ when CPICH Ec/Io $\geq$ -20 dB and SCH_Ec/Io $\geq$ -20 dB.

For a UE camping in a TDD cell, the UE shall be able to identify a new detectable cell belonging to the monitored set within $T_{identify\ intra}$ when fulfill requirements in TS 25.123, clause 8.1.2.2. for TDD 3.84 Mcps option and 8.1A.2.2 for TDD 1.28 Mcps option.

It is a UE option whether to indicate access technologies to the user (TS 23.122, clause 4.4.3.1.2). Therefore, for combined UTRAN/GSM tests, it is indicated in parentheses which access technology shall be indicated to the user if the UE has this capability.

If a parameter is indicated with a *, it means that the parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The PLMN numbers indicated in table 6.2 are used in test cases to associate a cell with an MCC and MNC for that cell. If no PLMN is explicitly specified, the default value is PLMN 1.

<< END OF MODIFIED SECTION >>

….

<< START OF MODIFIED SECTION >>

6.1.1.7 Cell reselection of ePLMN in manual mode

6.1.1.7.1 Definition

Test to verify that the UE shall be able to reselect to a cell of another PLMN declared as equivalent PLMN to the registered PLMN in the manual mode.

6.1.1.7.2 Conformance requirement

B) Manual network selection mode

Once the UE has registered on a PLMN selected by the user, the UE shall not automatically register on a different PLMN unless:

i) The new PLMN is declared as an equivalent PLMN by the registered PLMN;

or,

ii) The user selects automatic mode.

References:

TS 22.011 clause 3.2.2.2B

6.1.1.7.3 Test purpose

To verify that in Manual Network Selection Mode Procedure, the UE can perform cell reselection to an equivalent PLMN.

6.1.1.7.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell_selection_and_reselection_quality_measure is CPICH_RSCP (FDD).

All Radio Access Technology USIM fields and cells are UTRAN.

Each cell shall include the other cells as neighbouring cells in System Information Block Type 11.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_ RSCP [dBm] (TDD)	Test Channel	PLMN
Cell 1	-78	-69	1	PLMN 1
Cell 4	-62	-54	2	PLMN 2
Cell7	-68	-64	3	PLMN 3

Values of the system information fields applicable for this test case.to fullfill the criteria of Cell-Reselecton

Parameter	Setting
IMSI attach/detach	Method A, B: Not allowed Method C: Allowed
~~Intra-frequency cell re-selection indicator~~	~~Allowed~~
Cell_selection_and_reselection_quality_measure	CPICH RSCP (FDD)
Qqualmin (FDD only)	-16 dB
Qrxlevmin (FDD)	-115 dBm
Qrxlevmin (TDD)	-103 dBm
DRX cycle length	1,28 s

PLMN1 is the HPLMN.

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1

Test procedure

a) The SS activates cells 1.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) A Location Update Accept message shall be sent on reception of a Location Update message from the UE. The Location Update Accept message shall include PLMN3 in the equivalent PLMN list.

e) Cell 4 and 7 are activated.

6.1.1.7.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.

In step e), the UE shall perform a cell reselection and Location Update to PLMN 3, which is equivalent to PLMN1.

<< END OF MODIFIED SECTION >>

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Tdoc ⌘ T1-050032

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CHANGE REQUEST

⌘ **34.123-1** **CR** **1059** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 MultiRAT GMM test case 12.8
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	As per **24.008 section 9.4.14.5** "UE includes the P-TMSI IE in Routing Area Update Request message for UMTS only. No P-TMSI IE is required for GERAN". Thus as per the above section reference, at test step 12 of the expected sequence, when receiving Routing Area Update Request since UE is in GERAN the check of P-TMSI value is not required.
Summary of change:	⌘	At test step 12 of the expected sequence when receiving Routing Area Update Request check for P-TMSI value is removed.
Consequences if not approved:	⌘	Incorrect specification.

Clauses affected:	⌘	12.8.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

12.8 GMM READY timer handling

12.8.1 Definition

12.8.2 Conformance requirement

If a READY timer value is received by an UE capable of both UMTS and GSM in the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, then the received value shall be stored by the UE in order to be used at an intersystem change from UMTS to GSM.

Reference

3GPP TS 24.008 clause 4.7.2.1

12.8.3 Test purpose

To verify that READY timer value received in UTRA can be used in GSM.

12.8.4 Method of test

12.8.4.1 Test procedure

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A (UTRAN) in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B (GSM) in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Cell B is in neigbour cell list of cell A.
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in cell A (UTRAN).
The value of ATT flag in SIB3 IE “Control Channel Description” is set to value “0” in cell B (GSM).

In SIB3 and SIB4 the IE “$S_{searchRAT}$”, is set to value “20dB” in cell A (UTRAN).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

UE supports both GSM/GPRS and UTRAN Radio Access Technologies Yes/No

UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An attach is performed.

T3314; set to 60 seconds

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Cell B is switched off. (see note)
2	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C. The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3314 = 60 seconds T3312=6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell".Set the cell type of cell B to the "Serving cell".
7	UE			UE establish cell reselection to GSM system The following messages are received on Cell B (GERAN)
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
10	->		ROUTING AREA UPDATE COMPLETE	
11		SS		The SS verifies that the time between the end of Step 10 and the periodic RA updating is Ready Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' ~~Mobile identity=P-TMSI-1~~ Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
13	<-		ROUTING AREA UPDATE ACCEPT	Update type = 'RA updated'
14	UE			UE is swithed off or power is removed (see ICS)
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.8.5 Test requirements

At step4, when the UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

At step12, UE shall establish periodic Routing Area Update after Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%).

<< END OF MODIFIED SECTION >>

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Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050044

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1061** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to NAS GMM test cases 12.4.2.6.1 and 12.4.2.6.2 (GCF Work Item 12)
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ 1) As per 34.123-1 section **12.4.2.6.4.1**, after Step 10 of the Expected sequence (ROUTING AREA UPDATE REQUEST), the SS should transmit ROUTING AREA UPDATE ACCEPT at Step 11.

However, as per 24.008 section 4.1.1.1.1, the UE will discard the ROUTING AREA UPDATE ACCEPT, as the above message transmitted at Step 12 is not integrity protected.

Thus, between Step 10 and Step 11 of the expected sequence the integrity protection procedure needs to be performed.

2) As per 34.123-1 section **12.4.2.6.4.2**, after Step 11 of the Expected sequence (ROUTING AREA UPDATE REQUEST), the SS should transmit ROUTING AREA UPDATE ACCEPT at Step 12.

However, as per 24.008 section 4.1.1.1.1, the UE will discard the ROUTING AREA UPDATE ACCEPT, as the above message transmitted at Step 12 is not integrity protected.

Thus, between Step 11 and Step 12 of the expected sequence the integrity protection procedure needs to be performed.

Summary of change: ⌘ 1) For the test case 12.4.2.6.1 added new Step 10a after Step 10 which specifies:

"SS starts integrity protection".

2) For the test case 12.4.2.6.2 added new Step 11a after Step 11 which specifies:

	"SS starts integrity protection".
Consequences if not approved:	⌘ Test Case may fail a conformant UE.

Clauses affected:	⌘	12.4.2.6.4.1 and 12.4.2.6.4.2			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

12.4.2.6 Combined routing area updating / abnormal cases / access barred due to access class control

12.4.2.6.1 Definition

12.4.2.6.2 Conformance requirement

1) The UE shall not perform combined routing area updating procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the combined routing area updating procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (cell is changed).

12.4.2.6.4 Method of test

12.4.2.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred on Cell B.

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has Access Class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has Access Class x barred.
Both cells are operating in network operation mode I.

User Equipment:

The UE has valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

The SS indicates that access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The access class x is not barred anymore.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
10a				SS starts integrity protection
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
15		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell B.

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x not barred.
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
9		SS		Set the cell type of cell B to the "Suitable neighbour cell ". Set the cell type of cell C to the "Serving cell". (see note)
10	UE			Cell C is preferred by the UE.
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
11a				SS starts integrity protection
12		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
13		->	ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.2.6.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred , UE shall:

- not perform the combined routing area updating procedure.

At step10, when the access class x is not barred, UE shall:

- perform the combined routing area updating procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred UE shall:

- not perform the combined routing area updating procedure.

At step11, when the serving cell is changed, UE shall:

perform the combined routing area updating procedure.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050049

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1062 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to P3 RRC test cases 8.4.1.40
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	14/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The test case 8.4.1.40 is not consistent with the performance requirements in TS 25.133. In table 8.4.1.40.4-1, and for GSM carrier RSSI measurement, TGL1=7 and TGPL1=16 FDD frames (=160 ms). This gives that there will be 3 gaps per measurement period (480 ms). In the test case it is further stated that the UE shall measure on 16 GSM neighbors every second measurement period, i.e. 8 GSM neighbors per measurement period. In TS 25.133, clause 8.1.2.5.1 and table 8.4, it is specified that for TGL7 the UE shall be able to measure 6 GSM RSSI samples in each gap. Clause 8.1.2.5.1 further states "In case the UE is not able to acquire the required number of samples per GSM carrier during one measurement period the UE shall measure as many GSM carriers as possible during the measurement period using at least 3 samples per GSM carrier.". As there are 3 gaps per measurement period in test case 8.4.1.40 and as the performance requirement for TGL7 is 6 GSM RSSI samples per gap then the number of GSM RSSI samples per measurement period will be 18, correspondent to the UE being able to measure on 12 GSM neighbors every second measurement period (2 measurement periods * 18 samples per measurement period / 3 samples per cell). The number of GSM cells to monitor need thus be decreased to 12.
Summary of change:	⌘	1. Table 8.4.1.40.4-1: Changed number of monitored cells from 16 to 12. 2. Updated references in test method regarding the number of cells. 3. MEASUREMENT CONTROL (Step 4): Removed IEs for GSM cells with inter-RAT cell id 12 to 15.
Consequences if not approved:	⌘	Test case may fail good UE.

Clauses affected:	⌘	8.4.1.40			
Other specs affected:	⌘	Y / N			
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects Rel 99, Rel4 and Rel5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.40 Measurement Control and Report: Inter-RAT measurement, event 3C, in CELL_DCH state using sparse compressed mode pattern

8.4.1.40.1 Definition

8.4.1.40.2 Conformance requirement

1. Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in 3GPP TS 25.331 clause 8.6 unless otherwise specified below.

   The UE shall:

   - read the IE "Measurement command";
   - if the IE "measurement command" has the value "setup":
     - store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", possibly overwriting the measurement previously stored with that identity;
     - for measurement types "inter-RAT measurement" or "inter-frequency measurement":
       - if, according to its measurement capabilities, the UE requires compressed mode to perform the measurements and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or
       - if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:
         - begin measurements according to the stored control information for this measurement identity;

2. Event 3c: The estimated quality of other system is above a certain threshold. When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

Reference

3GPP TS 25.331 clause 8.4.1.3, 14.3.1.3.

8.4.1.40.3 Test Purpose

This test case is only applicable to UEs supporting both FDD and GSM, and which require compressed mode to perform the GSM related measurements.

1. To verify that the UE performs Inter-RAT measurement using a sparse compressed mode pattern as specified in the MEASUREMENT CONTROL message.
2. To verify that the UE send MEASUREMENT REPORT message when event 3C is triggered, and if the quality of the other system becomes better than the given threshold for event 3c.
3. To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3c as long as the hysteresis condition for triggering once again event 3c has not been fulfilled.

8.4.1.40.4 Method of test

Table 8.4.1.40.4-1 Sparse compressed mode pattern for Inter RAT measurement

TGMP	TGCFN	TGPRC	TGSN	TGL1	TGL2	TGD	TGPL1	TGPL2	Comment
GSM carrier RSSI measurement	Note 1	Inf.	4	7	Not sent	unde fined	16	16	Set-up to monitor 12~~16~~ GSM neighbours every second measurement period, i.e. every second 480ms period.
GSM Initial BSIC identification	Note 1	Inf.	8	14	Not sent	unde fined	24	24	Equal to Pattern 6 in TS 25.133 table 8.7.
GSM BSIC re-confirmation	Note 1	Inf.	8	14	Not sent	unde fined	24	24	Equal to Pattern 12 in TS 25.133 table 8.8.

NOTE 1: TGCFN can be found in the MEASUREMENT CONTROL message.

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: "CS-DCCH + DTCH_DCH", state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.40.4-2 Inter-RAT cell specific data

Parameter	Unit	Cell 1 (GSM)				Cell 2 (GSM)			
		T0	T1	T2	T3	T0	T1	T2	T3
Test Channel	#	GSM Ch.1				GSM Ch.2			
BCCH ARFCN	#	1				7			
CELL identity	#	0				1			
BSIC	#	BSIC 1				BSIC 2			
RF Signal Level	dBm	-90	-75	-80	-75	-75	-75	-75	-75

GSM cell 3 to 12~~16~~ as indicated in the a MEASUREMENT CONTROL message shall not be active in the test, i.e. no BCCH carrier shall be transmitted for GSM cell 3 to 12~~16~~ in this test.

The table above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in "CS-DCCH + DTCH_DCH", state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements on 12~~16~~ GSM cells. Event 3c is set up in this message, and compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases as described in table 8.4.1.40.4-2, since the cell individual offset for GSM cell 1 is 10 dB, event 3c shall be triggered in the UE. A MEASUREMENT REPORT shall be sent to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is -3 dB.

At instant T2, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.40.4-2, and at instant T3, it increases again to its previous level. No MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for the leaving condition to be met. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3c in the UE, compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.40.4-2.
7	→		MEASUREMENT REPORT	After about 1.6 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3c.
8				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.40.4-2.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.40.4-2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	16
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	8
- TGL1	14
- TGL2	Not present
- TGD	undefined
- TGPL1	24
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	66
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity

- TGSN	8
- TGL1	14
- TGL2	Not present
- TGD	undefined
- TGPL1	24
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=12~~16~~
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	10
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	-3
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	2
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	5
- inter-RAT cell id	3
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC4
- Band indicator	DCS 1800 band used
- BCCH ARFCN	17
- inter-RAT cell id	4
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC5
- Band indicator	DCS 1800 band used
- BCCH ARFCN	9
- inter-RAT cell id	5
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC6
- Band indicator	DCS 1800 band used
- BCCH ARFCN	11
- inter-RAT cell id	6
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC7
- Band indicator	DCS 1800 band used
- BCCH ARFCN	13
- inter-RAT cell id	7
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC8
- Band indicator	DCS 1800 band used

- BCCH ARFCN	15
- inter-RAT cell id	8
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC9
- Band indicator	DCS 1800 band used
- BCCH ARFCN	17
- inter-RAT cell id	9
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC10
- Band indicator	DCS 1800 band used
- BCCH ARFCN	19
- inter-RAT cell id	10
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC11
- Band indicator	DCS 1800 band used
- BCCH ARFCN	21
- inter-RAT cell id	11
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC12
- Band indicator	DCS 1800 band used
- BCCH ARFCN	17
~~- inter-RAT cell id~~	~~12~~
~~CHOICE Radio Access Technology~~	~~GSM~~
~~- Cell individual offset~~	~~0~~
~~- Cell selection and re-selection info~~	~~Not present~~
~~- BSIC~~	~~BSIC13~~
~~- Band indicator~~	~~DCS 1800 band used~~
~~- BCCH ARFCN~~	~~9~~
~~- inter-RAT cell id~~	~~13~~
~~CHOICE Radio Access Technology~~	~~GSM~~
~~- Cell individual offset~~	~~0~~
~~- Cell selection and re-selection info~~	~~Not present~~
~~- BSIC~~	~~BSIC14~~
~~- Band indicator~~	~~DCS 1800 band used~~
~~- BCCH ARFCN~~	~~11~~
~~- inter-RAT cell id~~	~~14~~
~~CHOICE Radio Access Technology~~	~~GSM~~
~~- Cell individual offset~~	~~0~~
~~- Cell selection and re-selection info~~	~~Not present~~
~~- BSIC~~	~~BSIC15~~
~~- Band indicator~~	~~DCS 1800 band used~~
~~- BCCH ARFCN~~	~~13~~
~~- inter-RAT cell id~~	~~15~~
~~CHOICE Radio Access Technology~~	~~GSM~~
~~- Cell individual offset~~	~~0~~
~~- Cell selection and re-selection info~~	~~Not present~~
~~- BSIC~~	~~BSIC16~~
~~- Band indicator~~	~~DCS 1800 band used~~
~~- BCCH ARFCN~~	~~15~~
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE

- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3c
- Threshold own system	Not included
- W	Not included
- Threshold other system	-74
- Hysteresis	5
- Time to Trigger	100 ms
- Reporting cell status	Report cells within active set or within virtual active set or of the other RAT
- Maximum number of reported cells	2
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 - 11 – TTI/10msec))mod 256
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=33f35s
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – 11 – TTI/10msec)) mod 256
- TGPSI	2
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – 7 – TTI/10msec)) mod 256
- TGPSI	3
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256

MEASUREMENT REPORT (Step 7)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3c
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.40.5 Test Requirement

After instant T1, since the cell individual offset for GSM cell 1 is +10 dB, event 3c shall be triggered in the UE, i.e the UE shall begin to transmit a MEASUREMENT REPORT to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is -3 dB.

After instant T2, no MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for the leaving condition to be met.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050050

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1063 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of USIM HPLMN information in idle mode test cases
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	14/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

There is an inconsistency in how HPLMN is specified in the idle mode test cases in section 6 of 34.123-1. Currently this is specified in some of the idle mode test cases using the USIM field "HPLMN with Access Technology". However, in 23.122 clause 4.4.3 it is stated:

"The MS shall not use the PLMN codes contained in the "HPLMN Selector with Access Technology" data field.

NOTE 1: To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HLPMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI."

The idle mode test cases need to be updated accordingly.

There is no impact on TTCN as the changes only impacts the settings on the USIM.

Summary of change: ⌘

Test cases 6.1.1.1, 6.1.1.3, 6.1.1.4, 6.1.2.6, 6.2.1.1, 6.2.1.2, 6.2.1.3, 6.2.1.4, 6.2.1.6, 6.2.1.7 and 6.2.1.8:

1. References to HPLMN for USIM field $EF_{HPLMNwACT}$ removed.
2. Added comment “The HPLMN (MCC+MNC) of the IMSI for the USIM is set to <HPLMN>”, <HPLMN> is the home PLMN for the actual test case.

Consequences if not approved: ⌘

Test cases remains incorrectly specified.

Clauses affected:	⌘	6.1.1.1, 6.1.1.3, 6.1.1.4, 6.1.2.6, 6.2.1.1, 6.2.1.2, 6.2.1.3, 6.2.1.4, 6.2.1.6, 6.2.1.7 and 6.2.1.8.			
Other specs affected:	⌘	**Y** / **N** **X** **X** **X**	Other core specifications Test specifications O&M Specifications	⌘	
Other comments:	⌘	Affects Rel 99, Rel4 and Rel5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of first modified section>

6.1 In a pure 3G environment

6.1.1 PLMN selection

6.1.1.1 PLMN selection of RPLMN, HPLMN, UPLMN and OPLMN; Manual mode

6.1.1.1.1 Definition

Test to verify that the UE can present the available PLMNs in priority order to the user when asked to do so in manual mode and that the displayed PLMNs can be selected / reselected by the user. Forbidden PLMNs shall also by displayed in the list. If available, the RPLMN shall be selected at switch-on, otherwise the displayed list shall include in priority order HPLMN, User-PLMN and Operator-PLMN. The last priority in the list is "Other PLMN/access technology combinations" which is not included in this test.

Only UTRAN cells and a UE equipped with a USIM with Radio Access Technology fields set to UTRAN are considered.

6.1.1.1.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage,the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

   2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

3. If a "PLMN not allowed" message is received by an MS in response to an LR request from a VPLMN, that VPLMN is added to a list of "forbidden PLMNs" in the SIM and thereafter that VPLMN will not be accessed by the MS when in automatic mode. A PLMN is removed from the "forbidden PLMNs" list if, after a subsequent manual selection of that PLMN, there is a successful LR. This list is retained when the MS is switched off or the SIM is removed. The HPLMN shall not be stored on the list of "forbidden PLMNs".

References

1. TS 23.122, clause 4.4.3.1;
2. TS 23.122, clause 4.4.3.1.2;
3. TS 23.122, clause 3.1.

NOTE: TS 31.102 defines the USIM fields.

6.1.1.1.3 Test purpose

1. To verify that if available, the RPLMN is selected at switch-on.
2. To verify that in Manual Network Selection Mode Procedure, the UE presents the HPLMN, UPLMN and OPLMN in a prioritized order.
3. To verify that forbidden PLMNs are also displayed in the list.

6.1.1.1.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell levels are from table 6.3. (FDD).

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_ Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_ RSCP [dBm] (TDD)	Test Channel	PLMN
Cell 1	-60	-54	1	PLMN 1
Cell 2	-65	-59	2	PLMN 2
Cell 3	-70	-64	3	PLMN 3
Cell 4	-75	-69	4	PLMN 4
Cell 5	-80	-74	5	PLMN 5
Cell 6	-85	-79	6	PLMN 6

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
~~$EF_{HPLMNwAcT}$~~	~~1st~~	~~PLMN 2~~
$EF_{PLMNwAcT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwAcT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 3	

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) Cell 1 is switched off.

e) PLMN 4 shall be selected when the PLMN list is presented.

f) The SS waits for random access requests from the UE.

g) Cell 4 is switched off.

h) PLMN 3 shall be selected when the PLMN list is presented. The SS shall reject the Registration Request from the UE.

i) PLMN 5 shall be selected (the list is already available).

j) The SS waits for random access requests from the UE.

k) Cell 5 is switched off.

l) PLMN 2 shall be selected when the PLMN list is presented.

m) The SS waits for random access requests from the UE.

n) Cell 2 is switched off.

o) PLMN 6 shall be selected when the PLMN list is presented.

p) The SS waits for random access requests from the UE.

q) Cell 6 is switched off.

6.1.1.1.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.

2) In step e), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 4, PLMN 5, PLMN 6.

3) In step f), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 4.

4) In step h), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 5, PLMN 6. After PLMN 3 has been selected, the list shall appear again as the UE cannot perform registration.

6) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN 5.

7) In step l), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 6.

8) In step m), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 2.

9) In step o), the list shall be presented. The priority shall be as follows: PLMN 3, PLMN 6.

10) In step p), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 6.

11) After step q), the UE shall inform that only limited service is possible.

6.1.1.2 PLMN selection of "Other PLMN / access technology combinations"; Manual mode

6.1.1.2.1 Definition

Test to verify that the UE can present the available high quality signal PLMNs in random order to the user when asked to do so in manual mode and that the displayed PLMNs can be selected / reselected by the user. Forbidden PLMNs shall also by displayed in the list.

Only UTRAN cells and a UE equipped with a USIM with Radio Access Technology fields set to UTRAN are considered.

6.1.1.2.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage,the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

   2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   In 2.5, the MS shall order the PLMN/access technology combinations in order of decreasing signal quality within each access technology. The order between PLMN/access technology combinations with different access technologies is an MS implementation issue.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

3. If a "PLMN not allowed" message is received by an MS in response to an LR request from a VPLMN, that VPLMN is added to a list of "forbidden PLMNs" in the SIM and thereafter that VPLMN will not be accessed by the MS when in automatic mode. A PLMN is removed from the "forbidden PLMNs" list if, after a subsequent manual selection of that PLMN, there is a successful LR. This list is retained when the MS is switched off or the SIM is removed. The HPLMN shall not be stored on the list of "forbidden PLMNs".

4. The UE shall scan all RF channels in the UTRA band according to its capabilities to find available PLMNs. On each carrier, the UE shall search for the strongest cell according to the cell search procedures (for FDD, see TS 25.214, and TDD, see TS 25.224) and read its system information, in order to find out which PLMN the cell belongs to. If the UE can read the PLMN identity, the found PLMN shall be reported to the NAS as a high quality PLMN (but without the RSCP value), provided that the following high quality criterion is fulfilled:

   - For an FDD cell, the measured primary CPICH RSCP value shall be greater than or equal to -95 dBm.

   - For a TDD cell, the measured P-CCPCH RSCP shall be greater than or equal to –84 dBm.

   Found PLMNs that do not satisfy the high quality criterion, but for which the UE has been able to read the PLMN identities are reported to the NAS together with the CPICH RSCP value for UTRA FDD cells and P-CCPCH RSCP for UTRA TDD cells.

References

1. TS 23.122, clause 4.4.3.1.
2. TS 23.122, clause 4.4.3.1.2.
3. TS 23.122, clause 3.1.
4. TS 25.304, clause 5.1.2.2.

NOTE: TS 31.102 defines the USIM fields.

6.1.1.2.3 Test purpose

1. To verify that in Manual Network Selection Mode Procedure, the UE presents "Other PLMN/access technology combinations" in a random order according to conformance requirement 2.4. UE requirement on measurement accuracy for PLMN selection is not specified in core specifications. Therefore, the ordering of PLMNs according to conformance requirement 2.5 is not tested.
2. To verify that forbidden PLMNs are also displayed in the list.

6.1.1.2.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_ RSCP [dBm] (TDD)	High Quality signal	Test Channel	PLMN
Cell 1	-85	-74	Yes	1	PLMN 6
Cell 2	-80	-69	Yes	2	PLMN 7
Cell 3	-80	-69	Yes	3	PLMN 8
Cell 4	-80	-69	Yes	4	PLMN 10

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 6
EF_{FPLMN}	PLMN 10	

Test procedure

Method C is applied.

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) PLMN 6 shall be selected when the PLMN list is presented.

d) The SS waits for random access requests from the UE.

e) Cell 1 is switched off.

f) PLMN 7 shall be selected when the PLMN list is presented.

g) The SS waits for random access requests from the UE.

h) Cell 2 is switched off.

i) PLMN 8 shall be selected when the PLMN list is presented.

j) The SS waits for random access requests from the UE.

k) Cell 3 is switched off.

l) PLMN 10 shall be selected when the PLMN list is presented. The SS shall accept the Registration Request from the UE.

m) Cell 4 is switched off.

6.1.1.2.5 Test Requirements

1) In step c), the list shall be presented. The priority shall be as follows: PLMN 6 followed by PLMN 7, PLMN 8 and PLMN 10 in random order.

2) In step d), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 6.

3) In step f), the list shall be presented. The priority shall be as follows: PLMN 7, PLMN 8 and PLMN 10 in random order.

4) In step g), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 7.

5) In step i), the list shall be presented. The priority shall be as follows: PLMN 8 and PLMN 10 in random order.

6) In step j), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN 8.

7) In step l), the list shall be presented containing only PLMN 10. The UE shall perform successful registration on Cell 4.

8) After step m), the UE shall inform that no network is available.

6.1.1.3 PLMN selection; independence of RF level and preferred PLMN; Manual mode

6.1.1.3.1 Definition

Test to verify that in Manual Network Selection Mode, the UE is able to obtain normal service on a PLMN which is neither the better nor a preferred PLMN and that it tries to obtain service on a VPLMN if and only if the user selects it manually.

6.1.1.3.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage,the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

   If successful registration is achieved, the MS indicates the selected PLMN.

If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

   2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

References

1. TS 23.122, clause 4.4.3.1.
2. TS 23.122, clause 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields.

6.1.1.3.3 Test purpose

1. To verify that the selected PLMN at switch-on is the HPLMN.
2. To verify that in Manual Network Selection Mode Procedure the UE tries to obtain service on a VPLMN if and only if the user selects it manually.
3. To verify that the UE is able to obtain normal service on a PLMN which is neither the better nor a prefered PLMN.

6.1.1.3.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

"IMSI attach" flag in the BCCH is set to allowed.

For FDD only:

Step a-d:

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	2	3
CPICH_Ec	dBm/3.84 MHz	-60	-70	OFF
PLMN		1	2	3

Step e-f:

CPICH_Ec	dBm/3.84 MHz	-60 -> OFF	-70	OFF

Step g-h:

CPICH_Ec	dBm/3.84 MHz	OFF	-70	OFF -> -60

Step i-l:

CPICH_Ec	dBm/3.84 MHz	OFF	-70 -> OFF	-60

For TDD only:

Step a-d:

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	2	3
P-CCPCH RSCP	dBm	-69	-74	OFF
PLMN		1	2	3

Step e-f:

P-CCPCH RSCP		-69 -> OFF	-74	OFF

Step g-h:

P-CCPCH RSCP		OFF	-74	OFF -> -69

Step k-l:

P-CCPCH RSCP		OFF	-74 -> OFF	-69

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		
~~$EF_{HPLMNwAcT}$~~	~~1st~~	~~PLMN 1~~
$EF_{PLMNwAcT}$	1st	PLMN 3

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN1.

Test procedure

Method C is applied.

a) The SS activates cells 1 and 2.

b) The UE is switched on.

c) PLMN 1 is selected manually.

d) The SS waits for random access requests from the UE. A complete Location Update is done.

e) Cell 1 is switched off.

f) The SS waits to see if there is any random access request from the UE.

g) Cell 3 is switched on.

h) The SS waits to see if there is any random access request from the UE.

i) PLMN 2 is selected manually.

j) The SS waits for random access requests from the UE. A complete Location Update is done.

k) Cell 2 is switched off.

l) The SS waits to see if there is any random access request from the UE.

6.1.1.3.5 Test Requirements

1) In step d), there shall be a response on Cell 1. The selected PLMN shall be PLMN 1.

2) In step f), there shall be no response from the UE within 2 min.

3) In step h), there shall be no response from the UE within 2 min.

4) In step j), there shall be a response on Cell 2. The selected PLMN shall be PLMN 2.

5) In step l), there shall be no response from the UE within 2 min.

6.1.1.4 PLMN selection of RPLMN, HPLMN, UPLMN and OPLMN; Automatic mode

6.1.1.4.1 Definition

Test to verify that in Automatic Network Selection Mode, the UE selects PLMNs in a prioritized order. Forbidden PLMNs shall not be selected. If available, the RPLMN shall be selected at switch-on, otherwise the list shall include in priority order HPLMN, User-PLMN and Operator-PLMN. The last priority in the list is "Other PLMN/access technology combinations" which is not included in this test.

Only UTRAN cells and a UE equipped with a USIM with Radio Access Technology fields set to UTRAN are considered.

6.1.1.4.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage,the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. Automatic Network Selection Mode Procedure:

   The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

   2.1 HPLMN (if not previously selected);

   2.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   If successful registration is achieved, the MS indicates the selected PLMN.

If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

3. If a "PLMN not allowed" message is received by an MS in response to an LR request from a VPLMN, that VPLMN is added to a list of "forbidden PLMNs" in the SIM and thereafter that VPLMN will not be accessed by the MS when in automatic mode. A PLMN is removed from the "forbidden PLMNs" list if, after a subsequent manual selection of that PLMN, there is a successful LR. This list is retained when the MS is switched off or the SIM is removed. The HPLMN shall not be stored on the list of "forbidden PLMNs".

References

1. TS 23.122, clause 4.4.3.1.
2. TS 23.122, clause 4.4.3.1.1.
3. TS 23.122, clause 3.1.

NOTE: TS 31.102 defines the USIM fields.

6.1.1.4.3 Test purpose

1. To verify that if available, the RPLMN is selected at switch-on.
2. To verify that in Automatic Network Selection Mode Procedure, the UE selects the RPLMN, HPLMN, UPLMN and OPLMN in a prioritized order.
3. To verify that forbidden PLMNs are not selected.

6.1.1.4.4 Method of test

Initial conditions

The UE is in automatic PLMN selection mode.

"IMSI attach" flag in the BCCH is set to allowed.

Cell levels are from table 6.3 (FDD).

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_ Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_ RSCP [dBm] (TDD)	Test Channel	PLMN
Cell 1	-60	-54	1	PLMN 1
Cell 2	-65	-59	2	PLMN 2
Cell 3	-70	-64	3	PLMN 3
Cell 4	-75	-69	4	PLMN 4
Cell 5	-80	-74	5	PLMN 5
Cell 6	-85	-79	6	PLMN 6

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
~~$EF_{HPLMNwAcT}$~~	~~1st~~	~~PLMN 2~~
$EF_{PLMNwAcT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwAcT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 3	

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) Cell 1 is switched off.

e) The SS waits for random access requests from the UE.

f) Cell 2 is switched off.

g) The SS waits for random access requests from the UE.

i) Cell 4 is switched off.

j) The SS waits for random access requests from the UE.

k) Cell 5 is switched off.

l) The SS waits for random access requests from the UE.

m) Cell 6 is switched off.

6.1.1.4.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.

2) In step e), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 2.

3) In step g), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 4.

4) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN 5.

5) In step l), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 6.

6) After step m), the UE shall inform that only limited service is possible

<End of modified section>

<Start of next modified section>

6.1.2.6 Emergency calls

6.1.2.6.1 Definition

Test to verify that the UE shall be able to initiate emergency calls when no suitable cells of the selected PLMN are available, but at least one acceptable cell is available.

6.1.2.6.2 Conformance requirement

1. Acceptable cell:

   An "acceptable cell" is a cell on which the UE may camp to obtain limited service (originate emergency calls). Such a cell shall fulfil the following requirements, which is the minimum set of requirements to initiate an emergency call in a UTRAN network:

   1.1 The cell is not barred;

   1.2 The cell selection criteria are fulfilled.

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   2.1 The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   2.2 The cell is not barred.

   2.3 The cell is not part of the list of "forbidden LAs for roaming".

   2.4 The cell selection criteria are fulfilled.

3. If the UE is unable to find any suitable cell of selected PLMN the UE shall enter the *Any cell selection* state.

4. Any Cell Selection State: In this state, the UE shall attempt to find an acceptable cell of an any PLMN to camp on, trying all RATs that are supported by the UE and searching first for a high quality cell. The UE, which is not camped on any cell, shall stay in this state until an acceptable cell is found.

5. Camped on Any Cell State: In this state the UE obtains limited service. The UE shall regularly attempt to find a suitable cell of the selected PLMN, trying RATs that are supported by the UE. If a suitable cell is found, this causes an exit to the Camped normally State.

6. In the Camped on Any Cell State, the UE shall perform the cell reselection evaluation process on the following occasions/triggers:

   6.1 UE internal triggers, so as to meet performance as specified in TS 25.133 for FDD mode and TS 25.123 for TDD mode.

   6.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified.

References

1. TS 25.304, clause 4.3.

2. TS 25.304, clause 4.3.

3. TS 25.304, clause 5.2.2.1.

4. TS 25.304, clause 5.2.8.

5. TS 25.304, clause 5.2.2.5.

6. TS 25.304, clause 5.2.9.1.

6.1.2.6.3 Test purpose

1. To verify that the UE shall be able to initiate emergency calls when no suitable cells of the selected PLMN are available, but at least one acceptable cell is available.

2. To verify that the UE selects a cell with S>0 and CellBarred = Not Barred (i.e. an "acceptable cell") when no suitable cells of the selected PLMN are available.

3. To verify that the UE ranks the acceptable cells according to the cell-ranking criterion R which in this test case equals Q as Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME parameters are not used. Treselection is not used either.

6.1.2.6.4 Method of test

Initial conditions

In step a-d, Cell 1 and 2 are neither suitable nor acceptable cells. Cell 3 is an acceptable cell but not suitable.

In step e-f, both Cell 1 and 3 are acceptable cells.

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
~~$EF_{HPLMNwAcT}$~~	~~1st~~	~~PLMN 2~~
EF_{FPLMN}	PLMN 3	

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

All cells in this test case belong to PLMN 3.

Step a-d:

For FDD only:

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	1	1
CPICH_Ec	dBm/3.84 MHz	-65	-60	-70
Qrxlevmin	dBm	-81	-51	-81
Srxlev*	dB	16	-9	11
CellBarred		Barred	Not barred	Not barred
Intra-frequency cell re-selection indicator		Allowed		
Tbarred		10s		

For TDD only:

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	1	1
P-CCPCH RSCP	dBm	-69	-64	-74
CellBarred		Barred	Not barred	Not barred
Intra-frequency cell re-selection indicator		Allowed		
Tbarred		10s		

Step e-f:

CellBarred		Barred -> Not barred	0	0

Test procedure

Method C is applied.

a) The SS activates the cells and monitors them for random access requests from the UE.

b) The UE is switched on.

c) 50 s after switch on, an emergency call is initiated on the UE.

d) The SS waits for random access request from the UE.

e) The SS changes the CellBarred of Cell 1 to 'Not barred'.

f) After 30 s an emergency call is initiated on the UE.

g) The SS waits for random access request from the UE.

6.1.2.6.5 Test requirements

1) In step d), the first access from the UE shall be on Cell 3.

2) In step g), the first access from the UE shall be on Cell 1.

<End of modified section>

<Start of next modified section>

6.2 Multi-mode environment (2G/3G case)

For Inter-RAT idle mode test cases cells belonging to different RAT shall use different LAC and RAC.

6.2.1 PLMN and RAT selection

6.2.1.1 Selection of the correct PLMN and associated RAT

6.2.1.1.1 Definition

Test to verify that the UE selects the correct combination of PLMN and associated access technology according to the fields on the USIM.

6.2.1.1.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage,the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. The "HPLMN Selector with Access Technology", "User Controlled PLMN Selector with Access Technology" and "Operator Controlled PLMN Selector with Access Technology" data fields in the SIM include associated access technologies for each PLMN entry. The PLMN/access technology combinations are listed in priority order. If an entry includes more than one access technology, then no priority is defined for the preferred access technology and the priority is an implementation issue.

3. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HLPMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI.

4. Automatic Network Selection Mode Procedure:

   The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

   i) HPLMN (if not previously selected);

   ii) Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   iii) Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   iv) Other PLMN/access technology combinations with received high quality signal in random order;

   v) Other PLMN/access technology combinations in order of decreasing signal quality.

5. In i [HPLMN (if not previously selected)], the MS shall search for all access technologies it is capable of. No priority is defined for the preferred access technology and the priority is an implementation issue, but "HPLMN Selector with Access Technology" data field on the SIM may be used to optimise the procedure.

References

1. TS 23.122, clause 4.4.3.1.

2. TS 23.122, clause 4.4.3

3. TS 23.122, clause 4.4.3

4. TS 23.122, clause 4.4.3.1.1

5. TS 23.122 (Rel-6), clause 4.4.3.1.1 f)

NOTE: TS 31.102 defines the USIM fields.

6.2.1.1.3 Test purpose

1. To verify that the UE selects the correct combination of HPLMN/access technology combination according to the fields on the USIM. If the UE is not using HPLMN Selector with Access Technology data field on the USIM there is no priority order for the RAT.

6.2.1.1.4 Method of test

Related ICS/IXIT statements

- Access technology priority supported in HPLMNwACT field – yes/no.

Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 2	-70	-59	1	PLMN 1	UTRAN
Cell 3	-75	-64	2	PLMN 2	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 1	-48	1	PLMN 1	GSM
Cell 4	-50	2	PLMN 2	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}			
$EF_{HPLMNwAcT}$	1st	~~PLMN 1~~	GSM
	2nd	~~PLMN 1~~	UTRAN

The HPLMN (MCC+MNC) of the IMSI for USIM A is set to PLMN1.

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}			
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM

The HPLMN (MCC+MNC) of the IMSI for USIM B is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) The UE is switched off and a USIM with settings according to USIM B is inserted.

e) The UE is switched on.

f) The SS waits for random access requests from the UE.

6.2.1.1.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN1 (GSM). If the UE is not using HPLMN Selector with Access Technology data field on the USIM, the response from the UE shall be either on Cell 1 or Cell 2. The displayed PLMN shall be either PLMN1 (GSM) or PLMN1 (UTRAN).

2) In step f), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN2 (UTRAN). If the UE is not using HPLMN Selector with Access Technology data field on the USIM, the response from the UE shall be either on Cell 3 or Cell 4. The displayed PLMN shall be either PLMN2 (GSM) or PLMN2 (UTRAN).

6.2.1.2 Selection of RAT for HPLMN; Manual mode

6.2.1.2.1 Definition

Test to verify that the UE selects the HPLMN RAT according to the HPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall try to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.2.2 Conformance requirement

1. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HLPMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI.

2. For HPLMN, the MS shall search for all access technologies it is capable of. The MS shall start its search using the access technologies stored in the "HPLMN Selector with Access Technology" data field on the SIM in priority order (i.e. the PLMN/access technology combinations are listed in priority order, if an entry includes more than one access technology then no priority is defined for the preferred access technology and the priority is an implementation issue).

3. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   3.1 HPLMN;

   3.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   3.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   3.4 Other PLMN/access technology combinations with received high quality signal in random order;

3.5 Other PLMN/access technology combinations in order of decreasing signal quality.

The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, clause 4.4.3.
2. TS 23.122, clause 4.4.3.1.1 (f).
3. TS 23.122, clause 4.4.3.1.2.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.2.3 Test purpose

1. To verify that:

1.1 the UE searches for a HPLMN RAT according to the HPLMN Selector with Access Technology data field on the USIM in priority order.

1.2 If no RAT on the priority list is available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.2.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 2	UTRAN
Cell 3	-75	-64	2	PLMN 3	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 2	GSM
Cell 4	-50	2	PLMN 3	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd		GSM

The HPLMN (MCC+MNC) of the IMSI for USIM A is set to PLMN2.

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd		

The HPLMN (MCC+MNC) of the IMSI for USIM B is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on.

c) PLMN2 (UTRAN) shall be selected when the PLMN list is presented.

d) The SS waits for random access requests from the UE.

e) Cell 1 is switched off.

f) PLMN2 (GSM) shall be selected when the PLMN list is presented.

g) The SS waits for random access requests from the UE.

h) The UE is switched off and a USIM with settings according to USIM B is inserted. All cells except Cell 1 are active.

i) The UE is switched on.

j) PLMN2 (GSM) shall be selected when the PLMN list is presented.

k) The SS waits for random access requests from the UE.

6.2.1.2.5 Test Requirements

1) In step c), the list shall be presented. It shall contain as highest priority PLMN2 (UTRAN as number 1 on the list and GSM as number 2).

2) In step d), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (UTRAN).

3) In step f), the list shall be presented. It shall contain as highest priority PLMN2 (GSM).

4) In step g), the response from the UE shall be on Cell 2 (2nd priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (GSM).

5) In step j), the list shall be presented. It shall contain as highest priority PLMN2 (GSM).

6) In step k), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM). (PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE-supported RATs).

6.2.1.3 Selection of RAT for UPLMN; Manual mode

6.2.1.3.1 Definition

Test to verify that the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM. If no PLMN/RAT on the UPLMN RAT priority list is available then the UE shall search for PLMNs in the OPLMN list.

6.2.1.3.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, clause 4.4.3.1.2.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.3.3 Test purpose

1. To verify that:

   1.1 the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM.

   1.2 If no RAT on the UPLMN RAT priority list is available, the UE searches for PLMNs in the OPLMN list.

6.2.1.3.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 3	UTRAN
Cell 3	-75	-64	2	PLMN 4	UTRAN
Cell 5	-78	-69	3	PLMN 5	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 3	GSM
Cell 4	-50	2	PLMN 4	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM
$EF_{PLMNwAcT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwAcT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) PLMN3 (UTRAN) shall be selected when the PLMN list is presented.

d) The SS waits for random access requests from the UE.

e) Cell 1 and Cell 2 are switched off. See note.

f) PLMN4 (GSM) shall be selected when the PLMN list is presented.

g) The SS waits for random access requests from the UE.

h) Cell 4 and Cell 3 are switched off. See note.

i) PLMN5 (UTRAN) shall be selected when the PLMN list is presented.

j) The SS waits for random access requests from the UE.

NOTE: When the serving cell (Cell 1 in step e and Cell 4 in step h) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus Cell 2 in step e and Cell 3 in step h need to be switched off.

6.2.1.3.5 Test Requirements

1) In step c), the list shall be presented. It shall contain in priority PLMN3 (UTRAN), PLMN4 (GSM), other PLMNs.

2) In step d), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{PLMNwAcT}$). The displayed PLMN shall be PLMN3 (UTRAN).

3) In step f), the list shall be presented. It shall contain in priority PLMN4 (GSM), PLMN5 (UTRAN), other PLMNs.

4) In step g), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{PLMNwACT}$). The displayed PLMN shall be PLMN4 (GSM).

5) In step i), the list shall be presented. It shall contain as highest priority PLMN5 (UTRAN).

6) In step j), the response from the UE shall be on Cell 5 (1st priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN5 (UTRAN).

6.2.1.4 Selection of RAT for OPLMN; Manual mode

6.2.1.4.1 Definition

Test to verify that the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM. If no PLMN/RAT on the OPLMN RAT priority list is available then the UE shall search for other PLMN/access technology combinations with received high quality signal in random order.

6.2.1.4.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, clause 4.4.3.1.2.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.4.3 Test purpose

1. To verify that:

1.1 the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM.

1.2 If no PLMN/RAT on the OPLMN RAT priority list is available, the UE searches for "other PLMN/access technology combinations with received high quality signal in random order".

6.2.1.4.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 5	UTRAN
Cell 3	-75	-64	2	PLMN 6	UTRAN
Cell 5	-78	-69	3	PLMN 7	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 5	GSM
Cell 4	-50	2	PLMN 6	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM
$EF_{PLMNwAcT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwAcT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) PLMN5 (UTRAN) shall be selected when the PLMN list is presented.

d) The SS waits for random access requests from the UE.

e) Cell 1 and Cell2 are switched off. See note.

f) PLMN6 (GSM) shall be selected when the PLMN list is presented.

g) The SS waits for random access requests from the UE.

h) Cell 4 and Cell 3 are switched off. See note.

i) PLMN7 (UTRAN) shall be selected when the PLMN list is presented.

j) The SS waits for random access requests from the UE.

NOTE: When the serving cell (Cell 1 in step e and Cell 4 in step h) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus Cell 2 in step e and Cell 3 in step h need to be switched off.

6.2.1.4.5 Test Requirements

1) In step c), the list shall be presented. It shall contain in priority PLMN5 (UTRAN), PLMN6 (GSM), other PLMNs.

2) In step d), the response from the UE shall be on Cell 1 (1^{st} priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN5 (UTRAN).

3) In step f), the list shall be presented. It shall contain as highest priority PLMN6 (GSM) followed by PLMN5 (GSM), PLMN6 (UTRAN) and PLMN7 (UTRAN) in random order.

4) In step g), the response from the UE shall be on Cell 4 (2^{nd} priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN6 (GSM).

5) In step i), the list shall be presented. It shall contain PLMN5 (GSM), PLMN6 (UTRAN) and PLMN7 (UTRAN) in random order.

6) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN7 (UTRAN).

6.2.1.5 Selection of "Other PLMN / access technology combinations"; Manual mode

6.2.1.5.1 Definition

Test to verify that if neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE tries to obtain registration on "Other PLMN/access technology combinations with received high quality signal in random order". Forbidden PLMNs shall also by displayed in the list.

6.2.1.5.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes PLMNs in the "forbidden PLMNs" list and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

1.1 HPLMN;

1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

1.4 Other PLMN/access technology combinations with received high quality signal in random order;

1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

In 1.5, the MS shall order the PLMN/access technology combinations in order of decreasing signal quality within each access technology. The order between PLMN/access technology combinations with different access technologies is an MS implementation issue.

The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" and "forbidden PLMNs" lists.

If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

2. UTRA case: The UE shall scan all RF channels in the UTRA band according to its capabilities to find available PLMNs. On each carrier, the UE shall search for the strongest cell according to the cell search procedures (for FDD, see TS 25.214, and TDD, see TS 25.224) and read its system information, in order to find out which PLMN the cell belongs to. If the UE can read the PLMN identity, the found PLMN shall be reported to the NAS as a high quality PLMN (but without the RSCP value), provided that the following high quality criterion is fulfilled:

   - For an FDD cell, the measured primary CPICH RSCP value shall be greater than or equal to -95 dBm.
   - For a TDD cell, the measured P-CCPCH RSCP value shall be greater than or equal to –84 dBm.

   Found PLMNs that do not satisfy the high quality criterion, but for which the UE has been able to read the PLMN identities are reported to the NAS together with the CPICH RSCP value for UTRA FDD cells and P-CCPCH RSCP for UTRA TDD cells.

3. GSM case: A PLMN shall be understood to be received with high quality signal if the signal level is above -85 dBm.

References

1. TS 23.122, clause 4.4.3.1.2.
2. TS 25.304, clause 5.1.2.2.
3. TS 03.22, clause 4.4.3.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.5.3 Test purpose

1. To verify that if neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE tries to obtain registration on "Other PLMN/access technology combinations with received high quality signal in random order".

2. To verify that forbidden PLMNs are also displayed in the list.

6.2.1.5.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	High Quality signal	Test Channel	PLMN	Radio Access Technology
Cell 1	-80	-74	Yes	1	PLMN 7	UTRAN
Cell 3	-80	-69	Yes	2	PLMN 9	UTRAN

Cell	RF signal level [dBm]	High Quality signal	Test Channel	PLMN	Radio Access Technology
Cell 2	-65	Yes	1	PLMN 8	GSM
Cell 4	-65	Yes	3	PLMN 11	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 7	
EF_{FPLMN}	PLMN 8		
	PLMN 9		

Test procedure

Method C is applied.

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) PLMN7 shall be selected when the PLMN list is presented.

d) The SS waits for random access requests from the UE.

e) Cell 1 is switched off.

f) PLMN8 shall be selected when the PLMN list is presented. The SS shall accept the Registration Request from the UE.

g) The SS waits for random access requests from the UE.

h) Cell 2 is switched off.

i) PLMN9 shall be selected when the PLMN list is presented. The SS shall accept the Registration Request from the UE.

j) The SS waits for random access requests from the UE.

k) Cell 3 is switched off.

l) PLMN11 shall be selected when the PLMN list is presented.

m) The SS waits for random access requests from the UE.

n) Cell 4 is switched off.

6.2.1.5.5 Test Requirements

In all steps, the PLMN priority list shall be as follows: PLMN7, PLMN8, PLMN9 and PLMN11 in random order.

1) In step c), the list shall be presented and contain PLMN7, 8, 9, 11.
2) In step d), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN7.
3) In step f), the list shall be presented and contain PLMN 8, 9, 11.
4) In step g), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN8.
5) In step i), the list shall be presented and contain PLMN9, 11.
6) In step j), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN9.
7) In step l), the list shall be presented and contain PLMN11. The displayed PLMN shall be PLMN11.
8) After step n), the UE shall inform that no network is available

6.2.1.6 Selection of RAT for HPLMN; Automatic mode

6.2.1.6.1 Definition

Test to verify that the UE selects the HPLMN RAT according to the HPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall try to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.6.2 Conformance requirement

1. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM together with PLMN codes. This version of the specification does not support multiple HLPMN codes and the "HPLMN Selector with Access Technology" data field is only used by the MS to get the HPLMN access technologies. The HPLMN code is the PLMN code included in the IMSI.
2. Automatic Network Selection Mode Procedure:

   The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

   i) HPLMN (if not previously selected);

   ii) Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   iii) Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   iv) Other PLMN/access technology combinations with received high quality signal in random order;

   v) Other PLMN/access technology combinations in order of decreasing signal quality.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

   If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

Alternative 3a for R99, Rel-4 and Rel-5:

3a. In i [HPLMN (if not previously selected)], the MS shall search for all access technologies it is capable of. The MS shall start its search using the access technologies stored in the "HPLMN Selector with Access Technology" data field on the SIM in priority order as defined in 23.122 clause 4.4.3 (i.e. the PLMN/access technology combinations are listed in priority order, if an entry includes more than one access technology then no priority is defined for the preferred access technology and the priority is an implementation issue).

Alternative 3b for all releases (from R99 onwards):

3b. In i [HPLMN (if not previously selected)], the MS shall search for all access technologies it is capable of. No priority is defined for the preferred access technology and the priority is an implementation issue, but "HPLMN Selector with Access Technology" data field on the SIM may be used to optimise the procedure.

References

1. TS 23.122, clause 4.4.3.
2. TS 23.122, clause 4.4.3.1.1.

3a. TS 23.122, clause 4.4.3.1.1 f)

3b. TS 23.122 (Rel-6), clause 4.4.3.1.1 f)

NOTE: TS 31.102 defines the USIM fields.

6.2.1.6.3 Test purpose

1. To verify that:

1.1 the UE searches for a HPLMN RAT according to the HPLMN Selector with Access Technology data field on the USIM in priority order. If the UE is not using HPLMN Selector with Access Technology data field on the USIM, there is no priority order for the RAT.

1.2 If no RAT on the priority list is available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.6.4 Method of test

Related ICS/IXIT statements

- Access technology priority supported in HPLMNwACT field – yes/no.

Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 2	UTRAN
Cell 3	-60	-60	2	PLMN 3	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 2	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM
$EF_{PLMNwAcT}$	1ST	PLMN3	UTRAN

The HPLMN (MCC+MNC) of the IMSI for USIM A is set to PLMN2.

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd		
$EF_{PLMNwAcT}$	1ST	PLMN3	UTRAN

The HPLMN (MCC+MNC) of the IMSI for USIM B is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-3 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) The UE is switched off and a USIM with settings according to USIM A is again inserted. All cells except Cell 1 are active.

e) The SS waits for random access requests from the UE.

f) The UE is switched off and a USIM with settings according to USIM B is inserted. All cells except Cell 1 are active.

g) The UE is switched on.

h) The SS waits for random access requests from the UE.

6.2.1.6.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (UTRAN). If the UE is not using HPLMN Selector with Access Technology data field on the USIM, the response from the UE shall be either on Cell 1 or Cell 2. The displayed PLMN shall be PLMN2 (either UTRAN or GSM).

2) In step e), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM).

3) In step h), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM).

6.2.1.7 Selection of RAT for UPLMN; Automatic mode

6.2.1.7.1 Definition

Test to verify that the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM. If no PLMN/RAT on the UPLMN RAT priority list is available then the UE shall search for PLMNs in the OPLMN list.

6.2.1.7.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

   The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

   1.1 HPLMN (if not previously selected);

   1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

   If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

References

1. TS 23.122, clause 4.4.3.1.1.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.7.3 Test purpose

1. To verify that:

   1.1 the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM.

   1.2 If no PLMN/RAT on the UPLMN RAT priority list is available, the UE searches for PLMNs in the OPLMN list.

6.2.1.7.4 Method of test

Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

In system information broadcast in each cell, the neighbouring cell list does not contain any other cell belonging to the same PLMN.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 3	UTRAN
Cell 3	-75	-64	2	PLMN 4	UTRAN
Cell 5	-80	-69	3	PLMN 5	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 3	GSM
Cell 4	-50	2	PLMN 4	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM
$EF_{PLMNwAcT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwAcT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN1) nor home PLMN/RAT (PLMN2, UTRAN or GSM) the UE shall select Cell 1 (1st priority PLMN/RAT in $EF_{PLMNwAcT}$).

d) Cell 1 and Cell 2 are switched off. See note.

e) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN3 registered at step c), home PLMN (PLMN2, UTRAN or GSM) nor any cells for the 1st priority PLMN/RAT in $EF_{PLMNwAcT}$ (PLMN3/UTRAN) then UE shall select Cell 4 (2nd priority PLMN/RAT in $EF_{PLMNwAcT}$).

f) Cell 4 and Cell 3 are switched off. See note.

g) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN4 registered at step e), home PLMN (PLMN2, UTRAN or GSM) nor user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) then UE shall select Cell 5 (1st priority RAT for $EF_{OPLMNwAcT}$).

NOTE: When the serving cell (Cell 1 in step d and Cell 4 in step f) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus need Cell 2 in step d and Cell 3 in step f to be switched off.

6.2.1.7.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{PLMNwAcT}$). The displayed PLMN shall be PLMN3 (UTRAN).

2) In step e), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{PLMNwAcT}$). The displayed PLMN shall be PLMN4 (GSM).

3) In step g), the response from the UE shall be on Cell 5 (1st priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN5 (UTRAN).

6.2.1.8 Selection of RAT for OPLMN; Automatic mode

6.2.1.8.1 Definition

Test to verify that the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM. If no PLMN/RAT on the OPLMN list is available then the UE shall search for other PLMN/access technology combinations with received high quality signal in random order.

6.2.1.8.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

   The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

   1.1 HPLMN (if not previously selected);

   1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   If successful registration is achieved, the MS indicates the selected PLMN.

   If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

   If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

References

1. TS 23.122, clause 4.4.3.1.1.

NOTE: TS 31.102 defines the USIM fields.

6.2.1.8.3 Test purpose

1. To verify that:

   1.1 the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM.

   1.2 If no PLMN/RAT on the OPLMN RAT priority list is available, the UE searches for "other PLMN/access technology combinations with received high quality signal in random order".

6.2.1.8.4 Method of test

Initial conditions

The UE is in automatic PLMN selection mode.

Cell levels are from tables 6.3, 6.4 and 6.5.

In system information broadcast in each cell, the neighbouring cell list does not contain any other cell belonging to the same PLMN.

Cell	CPICH_Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 5	UTRAN
Cell 3	-75	-64	2	PLMN 6	UTRAN
Cell 5	-80	-69	3	PLMN 7	UTRAN

Cell	RF signal level [dBm]	Test Channel	PLMN	Radio Access Technology
Cell 2	-48	1	PLMN 5	GSM
Cell 4	-50	2	PLMN 6	GSM

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}		PLMN 1	
$EF_{HPLMNwAcT}$	1st	~~PLMN 2~~	UTRAN
	2nd	~~PLMN 2~~	GSM
$EF_{PLMNwAcT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwAcT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

The HPLMN (MCC+MNC) of the IMSI for the USIM is set to PLMN2.

Test procedure

Method C is applied.

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN1), home PLMN/RAT (PLMN2, UTRAN or GSM) nor user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) then the UE shall select Cell 1 (1st priority RAT for $EF_{OPLMNwAcT}$).

d) Cell 1 and Cell 2 are switched off. See note.

e) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN5 registered in step c), home PLMN/RAT (PLMN2, UTRAN or GSM), user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) nor any cells for the 1st priority PLMN/RAT in $EF_{OPLMNwAcT}$ (PLMN5/UTRAN) then UE shall select Cell 4 (2nd priority PLMN/RAT in $EF_{OPLMNwAcT}$).

f) Cell 4 and Cell 3 are switched off. See note.

g) The SS waits for random access requests from the UE. As no cell exists for neither registered PLMN (PLMN6 registered in step e), home PLMN/RAT (PLMN2, UTRAN or GSM), user controlled PLMN/RAT (PLMN3/UTRAN or PLMN4/GSM) nor operator controlled PLMN/RAT (PLMN5/UTRAN or PLMN6/GSM) then UE shall select another PLMN/access technology combinations with received high quality signal in random order (Cell 5).

NOTE: When the serving cell (Cell 1 in step d and Cell 4 in step f) is switched off then the UE will trigger the recovery from lack of coverage scenario (TS 23.122 clause 4.4.3.1). The UE will search for a cell within the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the UE is capable of. Thus need Cell 2 in step d and Cell 3 in step f to be switched off.

6.2.1.8.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN5 (UTRAN).

2) In step e), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{OPLMNwAcT}$). The displayed PLMN shall be PLMN6 (GSM).

3) In step g), the response from the UE shall be on either Cell 5 (other PLMN/access technology combination) with associated PLMN7 (UTRAN) shown.

<End of modified section>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2004

Tdoc ⌘T1-050053

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1064** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☒ Core Network ☐

Title:	⌘	Correction of 'Test requirements' in high priority test case 14.2.32.2 (GCF WI -12) and in low priority test cases 14.2.31.1, 14.2.31.2, 14.2.35.1 and 14.2.35.2.
Source:	⌘	NEC
Work item code:	⌘	TEI
Date:	⌘	17/01/05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	Test requirement: 'At step 15 the UE shall return an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS' is not correct for subtestes where UL RLC SDU size > Test Data size. For these subtests, only number of bits equal to the 'Test Data size' length received first in the RLC SDU returned by UE, should be the same as DL RLC SDU sent by SS.
Summary of change:	⌘	New test requirement for sub-test 3 in these test cases is added to insure that correct number of bits in UL is checked by the SS.
Consequences if not approved:	⌘	A good UE will fail.

Clauses affected:	⌘	14.2.31.1, 14.2.31.2.4, 14.2.32.2.4, 14.2.35.1.4 and 14.2.35.2.4.

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
		X		Test specifications	34.123-3
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION >

14.2.31.1 Interactive or background / UL:64 DL:256 kbps / PS RAB ~~+ UL:3.4 DL: 3.4 kbps SRBs for DCCH~~/ 10 ms TTI

14.2.31.1.1 Conformance requirement

See 14.2.4.1.

14.2.31.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.31 for the downlink 10 ms TTI case.

14.2.31.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (256 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF0, TF1)
DL_TFC6	(TF1, TF1)
DL_TFC7	(TF2, TF1)
DL_TFC8	(TF3, TF1)
DL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to achieve verification of all test data sent by SS in downlink, i.e. UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

See 14.1.1 for test procedure.

14.2.31.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336) or RB5/TF1 (1x336).
   - for sub-test 3: RB5/TF3 (3x336) or RB5/TF1 (1x336).
   - for sub-test 4: RB5/TF4 (4x336) or RB5/TF1 (1x336).

3. At step 15 the UE shall return

   - for sub-test 1, 2 and 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the test data sent by the SS in downlink.

14.2.31.2 Interactive or background / UL:64 DL:256 kbps / PS RAB / 20 ms TTI

14.2.31.2.1 Conformance requirement

See 14.2.4.1.

14.2.31.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.31 for the downlink 20 ms TTI case.

14.2.31.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (256 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF0, TF1)
DL_TFC8	(TF1, TF1)
DL_TFC9	(TF2, TF1)
DL_TFC10	(TF3, TF1)
DL_TFC11	(TF4, TF1)
DL_TFC12	(TF5, TF1)
DL_TFC13	(TF6, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112

NOTE1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to achieve verification of all test data sent by SS in downlink, i.e. UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

See 14.1.1 for test procedure.

14.2.31.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336).
   - for sub-test 3: RB5/TF3 (3x336).
   - for sub-test 4 to 6: RB5/TF4 (4x336).
3. At step 15 the UE shall return
   - for sub-tests 1, 2, 4, 5 ~~to~~and 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the test data sent by the SS in downlink.

<END OF MODIFIED SECTION >

<START OF NEW MODIFIED SECTION >

14.2.32.2 Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.2.32.2.1 Conformance requirement

See 14.2.4.1.

14.2.32.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.32 for the 20 ms TTI case.

14.2.32.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF0, TF1)
DL_TFC10	(TF1, TF1)
DL_TFC11	(TF2, TF1)
DL_TFC12	(TF3, TF1)
DL_TFC13	(TF4, TF1)
DL_TFC14	(TF5, TF1)
DL_TFC15	(TF6, TF1)
DL_TFC16	(TF7, TF1)
DL_TFC17	(TF8, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC9, , UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 6392	RB5: 6392
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672

NOTE1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to achieve verification of all test data sent by SS in downlink, i.e. UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

See 14.1.1 for test procedure.

14.2.32.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336).
   - for sub-test 3: RB5/TF3 (3x336).
   - for sub-test 4 to 8: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-tests 1, 2, and 4 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the test data sent by the SS in downlink.

<END OF MODIFIED SECTION >

<START OF NEW MODIFIED SECTION >

14.2.35.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 10 ms TTI

14.2.35.1.1 Conformance requirement

See 14.2.4.1.

14.2.35.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.35 for the 10 ms TTI case.

14.2.35.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF0, TF1)
DL_TFC12	(TF1, TF1)
DL_TFC13	(TF2, TF1)
DL_TFC14	(TF3, TF1)
DL_TFC15	(TF4, TF1)
DL_TFC16	(TF5, TF1)
DL_TFC17	(TF6, TF1)
DL_TFC18	(TF7, TF1)
DL_TFC19	(TF8, TF1)
DL_TFC20	(TF9, TF1)
DL_TFC21	(TF10, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.
RB5: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

See 14.1.1 for test procedure.

14.2.35.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336).
   - for sub-test 3: RB5/TF3 (3x336).
   - for sub-test 4 to 10: RB5/TF4 (4x336).
3. At step 15 the UE shall return
   - for sub-tests 1, 2 and 4 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
   - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the test data sent by the SS in downlink.

14.2.35.2 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 20 ms TTI

14.2.35.2.1 Conformance requirement

See 14.2.4.1.

14.2.35.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.35 for the 20 ms TTI case.

14.2.35.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A
	TF11, bits	36x656	N/A
	TF12, bits	40x656	N/A
	TF13, bits	44x656	N/A
	TF14, bits	48x656	N/A
	TF15, bits	52x656	N/A
	TF16, bits	56x656	N/A
	TF17, bits	60x656	N/A
	TF18, bits	64x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF11, TF0)
DL_TFC12	(TF12, TF0)
DL_TFC13	(TF13, TF0)
DL_TFC14	(TF14, TF0)
DL_TFC15	(TF15, TF0)
DL_TFC16	(TF16, TF0)
DL_TFC17	(TF17, TF0)
DL_TFC18	(TF18, TF0)
DL_TFC19	(TF0, TF1)
DL_TFC20	(TF1, TF1)
DL_TFC21	(TF2, TF1)
DL_TFC22	(TF3, TF1)
DL_TFC23	(TF4, TF1)
DL_TFC24	(TF5, TF1)
DL_TFC25	(TF6, TF1)
DL_TFC26	(TF7, TF1)
DL_TFC27	(TF8, TF1)
DL_TFC28	(TF9, TF1)
DL_TFC29	(TF10, TF1)
DL_TFC30	(TF11, TF1)
DL_TFC31	(TF12, TF1)
DL_TFC32	(TF13, TF1)
DL_TFC33	(TF14, TF1)
DL_TFC34	(TF15, TF1)

TFCI	(RB5, DCCH)
DL_TFC35	(TF16, TF1)
DL_TFC36	(TF17, TF1)
DL_TFC37	(TF18, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
11	DL_TFC11	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 23032	RB5: 23032

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
12	DL_TFC12	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25592	RB5: 25592
13	DL_TFC13	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4 UL_TFC5, UL_TFC9	RB5: 28152	RB5: 28152
14	DL_TFC14	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 30712	RB5: 30712
15	DL_TFC15	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 33272	RB5: 33272
16	DL_TFC16	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 35832	RB5: 35832
17	DL_TFC17	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4 UL_TFC5, UL_TFC9	RB5: 38392	RB5: 38392
18	DL_TFC18	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 40952	RB5: 40952

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.
RB5: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size is set to nearest multiple of the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit) which is equal or bigger than the test data size.

See 14.1.1 for test procedure.

14.2.35.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336).
   - for sub-test 3: RB5/TF3 (3x336).
   - for sub-test 4 to 18: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-tests 1, 2 and 4 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the test data sent by the SS in downlink.

<END OF MODIFIED SECTION >

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2004

Tdoc ⌘T1-050054

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1065** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network [X] Core Network ☐

Title:	⌘	Corrections to GCF P3 test cases 14.2.51.1, 14.2.51a.1, 14.2.51b.1 and to low priority test cases 14.2.38d, 14.2.51a.2, 14.2.51b.2
Source:	⌘	NEC
Work item code:	⌘	TEI
Date:	⌘	17/01/05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	NOTE in the table specifying sub-tests refers to incorrect RB.
Summary of change:	⌘	RB reference corrected.
Consequences if not approved:	⌘	Error in the spec will remain.

Clauses affected:	⌘	14.2.38d.3, 14.2.51.1.3, 14.2.51a.1.3, 14.2.51a.2.3, 14.2.51b.1.3 and 14.2.51b.2.3.

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION >

14.2.38d Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38d.1 Conformance requirement

See 14.2.4.1.

14.2.38d.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38d.

14.2.38d.3 Method of test

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 + RB9 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x340	0x148
	TF1, bits	1x39	1x103	1x60	1x340	1x148
	TF2, bits	1x81	N/A	N/A	2x340	N/A
	TF3, bits	N/A	N/A	N/A	3x340	N/A
	TF4, bits	N/A	N/A	N/A	4x340	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8+RB9, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 + RB9 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x340	0x148
	TF1, bits	1x39	1x103	1x60	1x340	1x148
	TF2, bits	1x81	N/A	N/A	2x340	N/A
	TF3, bits	N/A	N/A	N/A	3x340	N/A
	TF4, bits	N/A	N/A	N/A	4x340	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8+RB9, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1, TF0)
DL_TFC4	(TF1, TF0, TF0, TF1, TF0)
DL_TFC5	(TF2, TF1, TF1, TF1, TF0)
DL_TFC6	(TF0, TF0, TF0, TF2, TF0)
DL_TFC7	(TF1, TF0, TF0, TF2, TF0)
DL_TFC8	(TF2, TF1, TF1, TF2, TF0)
DL_TFC9	(TF0, TF0, TF0, TF3, TF0)
DL_TFC10	(TF1, TF0, TF0, TF3, TF0)
DL_TFC11	(TF2, TF1, TF1, TF3, TF0)
DL_TFC12	(TF0, TF0, TF0, TF4, TF0)
DL_TFC13	(TF1, TF0, TF0, TF4, TF0)
DL_TFC14	(TF2, TF1, TF1, TF4, TF0)
DL_TFC15	(TF0, TF0, TF0, TF0, TF1)
DL_TFC16	(TF1, TF0, TF0, TF0, TF1)
DL_TFC17	(TF2, TF1, TF1, TF0, TF1)
DL_TFC18	(TF0, TF0, TF0, TF1, TF1)
DL_TFC19	(TF1, TF0, TF0, TF1, TF1)
DL_TFC20	(TF2, TF1, TF1, TF1, TF1)
DL_TFC21	(TF0, TF0, TF0, TF2, TF1)
DL_TFC22	(TF1, TF0, TF0, TF2, TF1)
DL_TFC23	(TF2, TF1, TF1, TF2, TF1)
DL_TFC24	(TF0, TF0, TF0, TF3, TF1)
DL_TFC25	(TF1, TF0, TF0, TF3, TF1)
DL_TFC26	(TF2, TF1, TF1, TF3, TF1)
DL_TFC27	(TF0, TF0, TF0, TF4, TF1)
DL_TFC28	(TF1, TF0, TF0, TF4, TF1)
DL_TFC29	(TF2, TF1, TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note1)	UL RLC SDU size (bits) Note 2	Test data size (bits) Note 2
1	DL_TFC1, DL_TFC16	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312 RB9: 312	RB5: 39 RB6: No data RB7: No data RB8: No data RB9: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312 RB9: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data RB9: No data
3	DL_TFC3, DL_TFC18	UL_TFC3, UL_TFC18	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312 RB9: 312	RB5: No data RB6: No data RB7: No data RB8: 312 RB9: No data
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC15, DUL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC16, UL_TFC18, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 312 RB9: 312	RB5: 39 RB6: No data RB7: No data RB8: 312 RB9: No data
5	DL_TFC5, DL_TFC20	UL_TFC5, UL_TFC20	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC15, UL_TFC17, UL_TFC18, UL_TFC20	RB5: 81 RB6: 103 RB7: 60 RB8: 312 RB9: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312 RB9: No data
6	DL_TFC6, DL_TFC21	UL_TFC6, UL_TFC21	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC15, UL_TFC21	RB5: 39 RB6: 103 RB7: 60 RB8: 632 RB9: 632	RB5: No data RB6: No data RB7: No data RB8: 632 RB9: No data
7	DL_TFC7, DL_TFC22	UL_TFC7, UL_TFC22	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC15, UL_TFC16, UL_TFC21, UL_TFC22	RB5: 39 RB6: 103 RB7: 60 RB8: 632 RB9: 632	RB5: 39 RB6: No data RB7: No data RB8: 632 RB9: No data
8	DL_TFC8, DL_TFC23	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC15, UL_TFC17, UL_TFC21, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 632 RB9: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632 RB9: No data

9	DL_TFC9, DL_TFC24	UL_TFC9, UL_TFC24	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC15, UL_TFC24	RB5: 39 RB6: 103 RB7: 60 RB8: 952 RB9: 952	RB5: No data RB6: No data RB7: No data RB8: 952 RB9: No data
10	DL_TFC10, DL_TFC25	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16, UL_TFC24, UL_TFC25	RB5: 39 RB6: 103 RB7: 60 RB8: 952 RB9: 952	RB5: 39 RB6: No data RB7: No data RB8: 952 RB9: No data
11	DL_TFC11, DL_TFC26	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17, UL_TFC24, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 952 RB9: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 952 RB9: No data
12	DL_TFC12, DL_TFC27	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC27	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: No data RB6: No data RB7: No data RB8: 1272 RB9: No data
13	DL_TFC13, DL_TFC28	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC13, UL_TFC15, UL_TFC16, UL_TFC27, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: 39 RB6: No data RB7: No data RB8: 1272 RB9: No data
14	DL_TFC14, DL_TFC29	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC14, UL_TFC15, UL_TFC17, UL_TFC27, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: No data
15	DL_TFC14, DL_TFC29	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC14, UL_TFC15, UL_TFC17, UL_TFC27, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272 RB9: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: No data RB9: 1272

NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCIs
NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
~~RB5~~ RB8and ~~RB6~~RB9: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size has been set equal to the size of the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).

14.2.38d.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6, RB7, RB8 or RB9.
   - for sub-test 2: an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8 or RB9.
   - for sub-test 3, 6, 9 and 12: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6, RB7 or RB9.
   - for sub-test 4, 7, 10 and 13: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6, RB7 or RB9.
   - for sub-test 5, 8, 11 and 14: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS. No data shall be received on RB9.
   - for sub-test 15: an RLC SDU on RB5, RB6, RB7 and RB9 having the same content as sent by SS; and no data shall be received on RB8.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

<END OF MODIFIED SECTION >

<START OF NEW MODIFIED SECTION >

14.2.51.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:64 DL:64 kbps / PS RAB

14.2.51.1.1 Conformance requirement

See 14.2.4.1.

14.2.51.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51 for the 20 ms TTI case.

14.2.51.1.3 Method of test

See 14.1.2 for test procedure.

Initial Conditions

The following RLC Info parameter values shall be set by the SS for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB (RB5):

	RB5 (Conv. 64 kbps)
Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard	 FALSE 100ms
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: Timer based discard without explicit signalling is used in uplink to secure that the UE will be able to return data for the case when the UE test loop function will not deliver all the SDUs in one and the same TTI .	

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps, 20 ms TTI)	RB6 (I/B 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF0, TF2, TF0)
UL_TFC3	(TF0, TF3, TF0)
UL_TFC4	(TF0, TF4, TF0)
UL_TFC5	(TF1, TF0, TF0)
UL_TFC6	(TF1, TF1, TF0)
UL_TFC7	(TF1, TF2, TF0)
UL_TFC8	(TF1, TF3, TF0)
UL_TFC9	(TF1, TF4, TF0)
UL_TFC10	(TF0, TF0, TF1)
UL_TFC11	(TF0, TF1, TF1)
UL_TFC12	(TF0, TF2, TF1)
UL_TFC13	(TF0, TF3, TF1)
UL_TFC14	(TF0, TF4, TF1)
UL_TFC15	(TF1, TF0, TF1)
UL_TFC16	(TF1, TF1, TF1)
UL_TFC17	(TF1, TF2, TF1)
UL_TFC18	(TF1, TF3, TF1)
UL_TFC19	(TF1, TF4, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps, 20 ms TTI)	RB6 (I/B 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF0, TF2, TF0)
DL_TFC3	(TF0, TF3, TF0)
DL_TFC4	(TF0, TF4, TF0)
DL_TFC5	(TF1, TF0, TF0)
DL_TFC6	(TF1, TF1, TF0)
DL_TFC7	(TF1, TF2, TF0)
DL_TFC8	(TF1, TF3, TF0)
DL_TFC9	(TF1, TF4, TF0)
DL_TFC10	(TF0, TF0, TF1)
DL_TFC11	(TF0, TF1, TF1)
DL_TFC12	(TF0, TF2, TF1)
DL_TFC13	(TF0, TF3, TF1)
DL_TFC14	(TF0, TF4, TF1)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1, DL_TFC11	UL_TFC1, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC10, UL_TFC11	RB5: 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2, DL_TFC12	UL_TFC2, UL_TFC12	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC10, UL_TFC12	RB5: 640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3, DL_TFC13	UL_TFC3, UL_TFC13	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC10, UL_TFC13	RB5: 640 RB6: 952	RB5: No data RB6: 952
4	DL_TFC4, DL_TFC14	UL_TFC4, UL_TFC14	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC10, UL_TFC14	RB5: 640 RB6: 1272	RB5: No data RB6: 1272

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
5	DL_TFC5, DL_TFC15	UL_TFC5, UL_TFC15	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 640 RB6: 312	RB5: 2x640 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC6, UL_TFC16	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC11, UL_TFC15, UL_TFC16	RB5: 640 RB6: 312	RB5: 2x640 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC7, UL_TFC17	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7, UL_TFC10, UL_TFC12, UL_TFC15, UL_TFC17	RB5: 640 RB6: 632	RB5: 2x640 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC8, UL_TFC18	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8, UL_TFC10, UL_TFC13, UL_TFC15, UL_TFC18	RB5: 640 RB6: 952	RB5: 2x640 RB6: 952
9	DL_TFC9, DL_TFC19	UL_TFC9, UL_TFC19	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9, UL_TFC10, UL_TFC14, UL_TFC15, UL_TFC19	RB5: 640 RB6: 1272	RB5: 2x640 RB6: 1272
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC5 and UL_TFC10 are part of minimum set of TFCIs. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. ~~RB8~~RB6: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size parameter has been set equal to the size of the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).						

14.2.51.1.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1, 2, 3, 4: RLC SDUs on RB6 having the same content as sent by the SS; and no data shall be received on RB5.

- for sub-test 5: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6.
- for sub-test 6, 7, 8 and 9: RLC SDUs on RB5 and RB6 having the same content as sent by the SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.51a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.51a.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:8 DL:8 kbps / PS RAB

14.2.51a.1.1 Conformance requirement

See 14.2.4.1.

14.2.51a.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51a for the 20 ms TTI case.

14.2.51a.1.3 Method of test

Initial Conditions

The following RLC Info parameter values for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB shall be set by the SS:

Uplink RLC TM RLC Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard Segmentation indication	 100ms FALSE
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 8 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF1, TF0, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF0, TF1)
UL_TFC5	(TF0, TF1, TF1)
UL_TFC6	(TF1, TF0, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 8kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF1, TF0, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF0, TF1)
DL_TFC5	(TF0, TF1, TF1)
DL_TFC6	(TF1, TF0, TF1)
DL_TFC7	(TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1 DL_TFC5	UL_TFC1 UL_TFC5	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2 DL_TFC6	UL_TFC2 UL_TFC6	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 RB6: 312	RB5: 2x640 RB6: No data
3	DL_TFC3 DL_TFC7	UL_TFC3 UL_TFC7	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7	RB5: 640 RB6: 312	RB5: 2x640 RB6: 312

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2_and UL_TFC4 are part of minimum set of TFCIs

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). As the TTI for ~~RB8~~ RB6 is the same for both downlink and uplink then UL RLC SDU size has been set to achieve UE to return one SDU per TTI, i.e. the UL RLC SDU size has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.2.51a.1.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
   - for sub-test 2: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.
   - for sub-test 3: an RLC SDU on RB5 and RB6 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.51a.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:8 DL:8 kbps / PS RAB

14.2.51a.2.1 Conformance requirement

See 14.2.4.1.

14.2.51a.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51a for the 40 ms TTI case.

14.2.51a.2.3 Method of test

Initial Conditions

The following RLC Info parameter values for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB shall be set by the SS:

Uplink RLC TM RLC Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard Segmentation indication	 100ms FALSE
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	**RB5 (Conv. 64 kbps)**	**RB6 (I/B 8 kbps)**	**DCCH**
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148

Uplink TFCS:

TFCI	**(RB5, RB6, DCCH)**
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF1, TF0, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF0, TF1)
UL_TFC5	(TF0, TF1, TF1)
UL_TFC6	(TF1, TF0, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	**RB5 (Conv. 64 kbps)**	**RB6 (I/B 64 kbps)**	**DCCH**
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF1, TF0, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF0, TF1)
DL_TFC5	(TF0, TF1, TF1)
DL_TFC6	(TF1, TF0, TF1)
DL_TFC7	(TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note1)	UL RLC SDU size (bits) Note 2	Test data size (bits) Note 2
1	DL_TFC1 DL_TFC5,	UL_TFC1 UL_TFC5	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2 DL_TFC5,	UL_TFC2 UL_TFC6	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 RB6: 312	RB5: 4x640 RB6: No data
3	DL_TFC3 DL_TFC5,	UL_TFC3 UL_TFC7	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7	RB5: 640 RB6: 312	RB5: 4x640 RB6: 312

NOTE1: UL_TFC0, UL_TFC1, UL_TFC2_and UL_TFC4 are part of minimum set of TFCIs
NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). As the TTI for ~~RB8~~ RB6 is the same for both downlink and uplink then UL RLC SDU size has been set to achieve UE to return one SDU per TTI, i.e. the UL RLC SDU size has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.2.51a.2.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
   - for sub-test 2: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.
   - for sub-test 3: an RLC SDU on RB5 and RB6 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.51b Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.51b.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:16 DL:64 kbps / PS RAB

14.2.51b.1.1 Conformance requirement

See 14.2.4.1.

14.2.51b.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51b for the 20 ms TTI case.

14.2.51b.1.3 Method of test

Initial Conditions

The following RLC Info parameter values for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB shall be set by the SS:

Uplink RLC TM RLC Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard Segmentation indication	 100ms FALSE
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

See 14.1.2 for test procedure.

For the PS UL:16/DL:64 kbps radio bearer the downlink TTI is 20ms while the uplink TTI is 40ms. As the SS will send one DL SDU every 20 ms then the UE test loop function will return 2 UL SDUs per uplink TTI. To not cause uplink transmission buffer overflow then the UL RLC SDU size should be chosen such that the UE will transmit 2 RLC SDUs per uplink TTI. For the case when the transport format under test does not allow for 2 SDUs to fit into the transport format size without requiring concatenation then the UL RLC SDU size shall be chosen such that one SDU is returned per uplink TTI.

Uplink TFS:

	TFI	**RB5 (Conv. 64 kbps)**	**RB6 (I/B 16 kbps, 40 ms TTI)**	**DCCH**
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF0, TF2, TF0)
UL_TFC3	(TF1, TF0, TF0)
UL_TFC4	(TF1, TF1, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF0, TF1)
UL_TFC7	(TF0, TF1, TF1)
UL_TFC8	(TF0, TF2, TF1)
UL_TFC9	(TF1, TF0, TF1)
UL_TFC10	(TF1, TF1, TF1)
UL_TFC11	(TF1, TF2, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF0, TF2, TF0)
DL_TFC3	(TF0, TF3, TF0)
DL_TFC4	(TF0, TF4, TF0)
DL_TFC5	(TF1, TF0, TF0)
DL_TFC6	(TF1, TF1, TF0)
DL_TFC7	(TF1, TF2, TF0)
DL_TFC8	(TF1, TF3, TF0)
DL_TFC9	(TF1, TF4, TF0)
DL_TFC10	(TF0, TF0, TF1)
DL_TFC11	(TF0, TF1, TF1)
DL_TFC12	(TF0, TF2, TF1)
DL_TFC13	(TF0, TF3, TF1)
DL_TFC14	(TF0, TF4, TF1)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC11	UL_TFC1, UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 1280 RB6: 312 (note 3)	RB5: No data RB6: 312
2	DL_TFC2, DL_TFC12	UL_TFC2 ,UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 1280 RB6: 312 (note 4)	RB5: No data RB6: 632
3	DL_TFC3, DL_TFC13	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 1280 RB6: 312 (note 4)	RB5: No data RB6: 952
4	DL_TFC4, DL_TFC14	UL_TFC2 ,UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 640 RB6: 312 (note 4)	RB5: No data RB6: 1272
5	DL_TFC5, DL_TFC15	UL_TFC3 ,UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 640 RB6: 312	RB5: 2x640 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC5, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 640 RB6: 312 (note 3)	RB5: 2x640 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC5, DL_TFC10, UL_TFC0, UL_TFC4, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 640 RB6: 312 (note 4)	RB5: 2x640 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC5, DL_TFC10, UL_TFC0, UL_TFC4, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 640 RB6: 312 (note 4)	RB5: 2x640 RB6: 952
9	DL_TFC9, DL_TFC19	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC5, DL_TFC10, UL_TFC0, UL_TFC4, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8,	RB5: 640 RB6: 312 (note 4)	RB5: 2x640 RB6: 1272

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
				UL_TFC9, UL_TFC11		

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCIs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).
NOTE 3: RB6 (TF1): For sub-tests where uplink transport format TF1 (1x336) is used then no adoptation to the difference in downlink TTI (20 ms) and uplink TTI (40ms) is possible as this would require the UE to concatenate 2 SDUs into one PDU. For these sub-tests the UL RLC SDU size is set equal to the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).
NOTE 4: ~~RB8~~ RB6 (TF2): For sub-tests where uplink transport formats TF2 (2x336) is used then to adopt to the difference in downlink TTI (20 ms) and uplink TTI (40ms) the UL RLC SDU size has been chosen such that 2 SDUs will be returned per uplink TTI. I.e. the UL RLC SDU size is set equal to half the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).

14.2.51b.1.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
   - for sub-test 2: RLC SDUs on RB6 having the first 312 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5.
   - for sub-test 3, 4: RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
   - for sub-test 5: RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
   - for sub-test 6 : RLC SDUs on RB5 and RB6 having the same content as sent by SS
   - for sub-test 7 : RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
   - for sub-test 8 , 9 : RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.51b.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:16 DL:64 kbps / PS RAB

14.2.51b.2.1 Conformance requirement

See 14.2.4.1.

14.2.51b.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51b for the 40 ms TTI case.

14.2.51b.2.3 Method of test

Initial Conditions

The following RLC Info parameter values for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB shall be set by the SS:

Uplink RLC TM RLC Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard Segmentation indication	 100ms FALSE
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

See 14.1.2 for test procedure.

For the PS UL:16/DL:64 kbps radio bearer the downlink TTI is 20ms while the uplink TTI is 40ms. As the SS will send one DL SDU every 20 ms then the UE test loop function will return 2 UL SDUs per uplink TTI. To not cause uplink transmission buffer overflow then the UL RLC SDU size should be chosen such that the UE will transmit 2 RLC SDUs per uplink TTI. For the case when the transport format under test does not allow for 2 SDUs to fit into the transport format size without requiring concatenation then the UL RLC SDU size shall be chosen such that one SDU is returned per uplink TTI.

Uplink TFS:

	TFI	**RB5 (Conv. 64 kbps)**	**RB6 (I/B 16 kbps, 40 ms TTI)**	**DCCH**
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A

Uplink TFCS:

TFCI	**(RB5, RB6, DCCH)**
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF0, TF1, TF0)
UL_TFC2	(TF0, TF2, TF0)
UL_TFC3	(TF1, TF0, TF0)
UL_TFC4	(TF1, TF1, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF0, TF1)
UL_TFC7	(TF0, TF1, TF1)
UL_TFC8	(TF0, TF2, TF1)
UL_TFC9	(TF1, TF0, TF1)
UL_TFC10	(TF1, TF1, TF1)
UL_TFC11	(TF1, TF2, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF0, TF1, TF0)
DL_TFC2	(TF0, TF2, TF0)
DL_TFC3	(TF0, TF3, TF0)
DL_TFC4	(TF0, TF4, TF0)
DL_TFC5	(TF1, TF0, TF0)
DL_TFC6	(TF1, TF1, TF0)
DL_TFC7	(TF1, TF2, TF0)
DL_TFC8	(TF1, TF3, TF0)
DL_TFC9	(TF1, TF4, TF0)
DL_TFC10	(TF0, TF0, TF1)
DL_TFC11	(TF0, TF1, TF1)
DL_TFC12	(TF0, TF2, TF1)
DL_TFC13	(TF0, TF3, TF1)
DL_TFC14	(TF0, TF4, TF1)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC11	UL_TFC1, UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 640 RB6: 312 (note 3)	RB5: No data RB6: 312
2	DL_TFC2, DL_TFC12	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 640 RB6: 312 (note 4)	RB5: No data RB6: 632
3	DL_TFC3, DL_TFC13	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 640 RB6: 312 (note 4)	RB5: No data RB6: 952
4	DL_TFC4, DL_TFC14	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 640 RB6: 312 (note 4)	RB5: No data RB6: 1272
5	DL_TFC5, DL_TFC15	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 640 RB6: 312	RB5: 4x640 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 640 RB6: 312 (note 3)	RB5: 4x640 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 640 RB6: 312 (note 4)	RB5: 4x640 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 640 RB6: 312 (note 4)	RB5: 4x640 RB6: 952

9	DL_TFC9, DL_TFC19	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 640 RB6: 312 (note 4)	RB5: 4x640 RB6: 1272

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCIs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).

NOTE 3: RB6 (TF1): For sub-tests where uplink transport format TF1 (1x336) is used then no adoptation to the difference in downlink TTI (20 ms) and uplink TTI (40ms) is possible as this would require the UE to concatenate 2 SDUs into one PDU. For these sub-tests the UL RLC SDU size is set equal to the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).
NOTE 4: ~~RB8~~ RB6 (TF2): For sub-tests where uplink transport formats TF2 (2x336) is used then to adopt to the difference in downlink TTI (20 ms) and uplink TTI (40ms) the UL RLC SDU size has been chosen such that 2 SDUs will be returned per uplink TTI. I.e. the UL RLC SDU size is set equal to half the payload size of the UL TF under test minus 8 bits (the size of 7 bit length indicator and expansion bit).

14.2.51b.2.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
   - for sub-test 2: RLC SDUs on RB6 having the first 312 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5.
   - for sub-test 3, 4: RLC SDUS on RB5 having the same content as sent by SS; and rlc sduSon RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
   - for sub-test 5: RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
   - for sub-test 6 : RLC SDUs on RB5 and RB6 having the same content as sent by SS
   - for sub-test 7 : RLC SDUs on RB5 having the same content as sent by SS; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
   - for sub-test 8 , 9 : RLC SDUs on RB5 having the same content as sent by SS ; and RLC SDUs on RB6 having the content equal to the first 312 bits of the test data sent by the SS in downlink
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

<END OF MODIFIED SECTION >

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050058

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1066** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to RAB test case 14.2.34.1 (GCF Work Item 12)
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘[H	The order of "Restricted UL TFCIs" for the Sub Test 1 mentioned in 34.123-1 section **14.2.34.1.3**, is as below: UL_TFC0, UL_TFC1, UL_TFC**7**, UL_TFC**6**. However UL_TFC6 should be stated before UL_TFC7.
Summary of change:	⌘	Changed the order of "Restricted UL TFCIs" for Sub-test1 as below: UL_TFC0, UL_TFC1, UL_TFC**6**, UL_TFC**7**
Consequences if not approved:	⌘	Inconsistency will remain between 34.123-1 and TTCN implementation.

Clauses affected:	⌘	Section 14.2.34.1.4

Other specs affected: ⌘

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

⌘

Other comments: ⌘ Affects Rel-5, Rel-4 and R99 UEs.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

14.2.34.1 Interactive or background / UL:384 DL:384 kbps / PS RAB / 10 ms TTI

14.2.34.1.1 Conformance requirement

See 14.2.4.1.

14.2.34.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.34 for the 10 ms TTI case.

14.2.34.1.3 Method of test

Uplink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF0, TF1)
DL_TFC7	(TF1, TF1)
DL_TFC8	(TF2, TF1)
DL_TFC9	(TF3, TF1)
DL_TFC10	(TF4, TF1)
DL_TFC11	(TF5, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC~~7~~6, UL_TFC~~6~~7	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 3832	RB5: 3832
NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC6 are part of minimum set of TFCIs. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.						

See 14.1.1 for test procedure.

14.2.34.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15 the UE transmitted transport format shall be
   - for sub-test 1: RB5/TF1 (1x336).
   - for sub-test 2: RB5/TF2 (2x336).
   - for sub-test 3: RB5/TF3 (4x336).

- for sub-test 4: RB5/TF4 (8x336).
- for sub-test 5: RB5/TF4 (12x336).

3. At step 15 the UE shall return

- for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

<< END OF MODIFIED SECTION >>

3GPP TSG–T1 Meeting #26
Bangalore, India, Jan 31th – Feb 4th 2005

Tdoc ⌘T1-050060

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1067 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1Rel-5: Correction of 8_4_1_2A for TDD
Source:	⌘	CATT/CCSA
Work item code:	⌘	LCR TDD
Date:	⌘	20/01/2005
Category:	⌘	***F***
Release:	⌘	*Rel-5*

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	1. In MEASUREMENT REPORT (Step 10), there should not be measurement results IE. 2. In System Information Block type 11 (Step 1), there should not be IE of Cells for measurement. 3. Some IEs are not correct in MEASUREMENT CONTROL (Step 7), MEASUREMENT REPORT (Step 8), MEASUREMENT CONTROL (Step 9) and MEASUREMENT REPORT (Step 10).
Summary of change:	⌘	1. To delete measurement results IE in MEASUREMENT REPORT (Step 10). 2. To delete Cells for measurement IE in System Information Block type 11 (Step 1). 3. To correct the IEs' errors in the messages.
Consequences if not approved:	⌘	The test case will not executed rightly for TDD.

Clauses affected:	⌘	8.4.1.2A

Other specs affected:	⌘	Y	N		⌘
				Other core specifications	
		X		Test specifications	
				O&M Specifications	

Other comments:	⌘	The CR is only connected with TDD test cases.

8.4.1.2A Measurement Control and Report: Inter-frequency measurement for transition from idle mode to CELL_DCH state (TDD)

8.4.1.2A.1 Definition

8.4.1.2A.2 Conformance requirement

Upon transition from idle mode to CELL_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 12 (or System Information Block type 11).

Upon reception of a MEASUREMENT CONTROL message the UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> for measurement types "inter-frequency measurement":

3> if the IE "Inter-frequency cell info list" for that measurement identity is empty; or

3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

4> if the measurement is valid in the current RRC state of the UE:

5> begin measurements according to the stored control information for this measurement identity.

If the IE "Reporting Cell Status" is not received for inter-frequency measurement, the UE shall:

1> exclude the IE "Cell Measured Results" for any cell in MEASUREMENT REPORT.

Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.4.1.8.2 and 8.6.7.9

8.4.1.2A.3 Test Purpose

1. To confirm that the UE stops monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 messages, after it enters CELL_DCH state from idle mode.

2. To confirm that the UE excludes the IE "cell measured results" for any cells in the MEASUREMENT REPORT messages, after it receives a MEASUREMENT CONTROL message with "Reporting cell status" IE omitted.

8.4.1.2A.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active..

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.2A-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.4.1.2A-1

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
PCCPCH RSCP	dBm	-60	-75

The UE is initially in idle mode and has selected cell 1 for camping.

SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). Next SS and UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service).The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings for cells listed in the IE "inter-frequency cell info list" in System Information Block Type 11.

SS sends MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS requests UE to perform inter-frequency measurement with periodic reporting of PCCPCH RSCP values for cell 4.

The UE shall start inter-frequency measurement and reporting for cell 4's PCCPCH RSCP values. It shall report this measurement result by transmitting MEASUREMENT REPORT messages on uplink DCCH periodically at 16 seconds interval.

SS sends MEASUREMENT CONTROL message on the downlink DCCH omitting the IE "Reporting cell status". The UE shall send MEASUREMENT REPORT messages on the uplink DCCH, with the IE "Cell measured results" excluded in these messages. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		System Information Block type 11	The UE is idle mode and camped onto cell 1.System Information Block Type 11 to be transmitted is different from the default settings (see specific message contents)
2	↔		SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	SS prompts the operator to make an outgoing call.
3	↔		SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4	↔		SS executes procedure P11 (clause 7.4.2.5.2) or P13 (clause 7.4.2.6.2) specified in TS 34.108.	
5			Void	
6				SS checks to see that no MEASUREMENT REPORT messages are received.
7	←		MEASUREMENT CONTROL	SS requests UE to start inter-frequency measurement for cell 4, and performing periodic reporting for cell 4's PCCPCH RSCP. See specific message content below.
8	→		MEASUREMENT REPORT	UE shall report cell 4's PCCPCH RSCP reading periodically.

9	←	MEASUREMENT CONTROL	SS changes the reporting criteria of cell 4 to 'event 2c'. "Reporting cell status" IE in this message is omitted.
10	→	MEASUREMENT REPORT	SS monitors the uplink DCCH to make sure that only 1 such message is received almost immediately after step 9. This message shall not contain IE "Inter-frequency cell measured results"
11	←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

System Information Block type 11 (Step 1)

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
-Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.1 (TDD)" in clause 6.1.4 of TS 34.108
- Cell Selection and Re-selection info	Not present
~~- Cells for measurement~~	~~Not present~~
- Intra-frequency measurement quantity	Not present
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	Not present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	Not present
- New inter-frequency cells	
- Inter-frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to table 6.1.4 of TS34.108 for Cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4 of TS 34.108
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cell selection and re-selection info	Not present For neigbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.
~~- Cells for measurement~~	~~Not Present~~
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

RRC CONNECTION SETUP (Step 2)

UE will use the message found in TS 34.108 clause 9.

MEASUREMENT CONTROL (Step 7)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	UARFCN of the frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	Set to same as used for cell 4
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cells for measurement	Not Present
~~- Inter-frequency cell id~~	~~4~~
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE mode	TDD
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- Primary CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cell within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Check to see if set to the UARFCN of the frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
~~- Primary CCPCH Info~~	~~Check to see if set to the same for cell 4~~
~~- Timeslot ISCP reporting indicator~~	~~Check to see if it is absent~~
~~- Proposed TGSN Reporting required~~	~~Check to see if it is absent~~
~~- Primary CCPCH RSCP reporting indicator~~	~~Check to see if it is present~~
~~- Pathloss~~	~~Check to see if it is absent~~
- CHOICE mode	TDD
- cell parameters identity	Check to see if set to the same for cell 4
- proposed TGSN	Check to see if it is absent
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- timeslot list	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Additional Measured results	Check to see if it is absent
Event Results	Check to see if it is absent

MEASUREMENT CONTROL (Step 9)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Set up
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nt)	UARFCN of the frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	Set to same as used for cell 4
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cells for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE mode	TDD
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- Primary CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
~~- Reporting cell status~~	~~Not Present~~
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	0.5 dB
- Time to trigger	0 milliseconds
- Reporting cell status	Not Present
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non used frequency	0
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 10)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	Check to see if it is absent
~~- CHOICE measurement~~	~~Check to see if set to "Inter-frequency measured results list"~~
~~- Inter-frequency measurement results~~	
~~- Frequency info~~	
~~- UARFCN~~	~~Check to see if set to the UARFCN of the frequency for cell 4~~
~~- UTRA carrier RSSI~~	~~Check to see if it is absent~~
~~- Inter-frequency cell measurement results~~	~~Check to see if it is absent~~
Measured Results on RACH	Check to see if it is absent
Additional Measured Results	Check to see if it is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Inter-frequency measurement event results"
- Inter-frequency event identity	Check to see if this IE is set to "2c"
- Inter-frequency cells	
- Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Check to see if set to the UARFCN of the frequency for cell 4
- Non frequency related measurement event results	
- CHOICE Mode	Check to see if set to "TDD"
- Primary CCPCH info	
- CHOICE Mode	Check to see if set to "TDD"
- CHOICE *TDD option*	Check to see if set to "1.28 Mcps TDD"
- TSTD indicator	Check to see if set to "FALSE"
- Cell parameters Id	Check to see if it's the same for cell 4
- SCTD indicator	Check to see if set to "FALSE"
~~- Primary CCPCH info~~	~~Check to see if set to the same as cell 4~~

8.4.1.2A.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages pertaining to the measurement of PCCPCH RSCP of cell 4.

After step 7 the UE shall transmit MEASUREMENT REPORT messages on uplink DCCH, reporting cell 4's PCCPCH RSCP value at periodic time interval of 16 seconds in "inter-frequency cell measurement results" IE.

After step 9 the UE shall transmit only 1 MEASUREMENT REPORT message on the uplink DCCH. In this message, IE "inter-frequency cell measured results" shall be absent.

3GPP TSG–T1 Meeting #26
Bangalore, India, Jan 31th – Feb 4th 2005

Tdoc ⌘T1-050061

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CHANGE REQUEST

⌘ **34.123-1** **CR** 1068 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1Rel-5: Correction of 8_4_1_4A for TDD
Source:	⌘	CATT/CCSA
Work item code:	⌘	LCR TDD
Date:	⌘	20/01/2005
Category:	⌘	***F***
Release:	⌘	*Rel-5*

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	1. Some IEs are not correct in System Information Block type 11 (Step 1) and CELL UPDATE (Step 8).
Summary of change:	⌘	1. To correct the IEs' errors in the messages.
Consequences if not approved:	⌘	The test case will not executed rightly for TDD.

Clauses affected:	⌘	8.4.1.4A

Other specs affected:	⌘	Y	N		⌘
				Other core specifications	
		X		Test specifications	
				O&M Specifications	

Other comments: ⌘ The CR is only connected with TDD test cases.

8.4.1.4A Measurement Control and Report: Inter-frequency measurement for transition from idle mode to CELL_FACH state (TDD)

8.4.1.4A.1 Definition

8.4.1.4A.2 Conformance requirement

Upon transition from idle mode to CELL_FACH state, the UE shall:

1> begin or continue monitoring cells listed in the IE "inter-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11);

Reference

3GPP TS 25.331, clause 8.4.1.9.2

8.4.1.4A.3 Test Purpose

1. To confirm that the UE begins to monitor the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 11 or 12 messages, after it enters CELL_FACH state from idle mode. However, it shall not transmit any MEASUREMENT REPORT messages to report measured results for inter-frequency cells.

8.4.1.4A.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.4A-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.4A-1

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
PCCPCH RSCP	dBm	-60	-75	-75	-60

The UE is initially at idle mode and has selected cell 1 for camping. The System Information Block type 11 messages are modified with respect to the default settings to prevent reporting of "Cell synchronisation information" and also to include cell 4 into the "inter-frequency cell list" IE.

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P6. Next SS and UE shall execute procedure P10. Then SS and UE shall execute procedure P14. The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings for inter-frequency cells belonging to the monitored set. SS re-adjusts its downlink power settings according to columns marked "T1" in table 8.4.1.4A-1. This is expected to trigger a cell reselection in the UE. The UE shall send CELL UPDATE message to cell 4 in order to report this event. Upon receiving this message, SS replies with the CELL UPDATE CONFIRM message, which

includes IE "New C-RNTI", on the downlink DCCH. UE shall then reply with a UTRAN MOBILITY INFORMATION CONFIRM message.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		System Information Block type 11	The UE is in idle mode in cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2	↔		SS executes procedure P6 (clause 7.4.4.4.2) specified in TS 34.108.	
3	↔		SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4	↔		SS executes procedure P6 (clause 7.4.4.4.2) specified in TS 34.108.	
5	→		Void	
6				SS checks to see that no MEASUREMENT REPORT messages are received.
7				SS reconfigures the downlink transmission power, according to columns "T1" of table 8.4.1.4A-1.
8	→		CELL UPDATE	UE shall detect that cell 4 has become stronger than cell 1. It sends this message after re-selecting to cell 4
9	←		CELL UPDATE CONFIRM	Use message content.
10	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

All messages indicated below shall use the same content as described in TS 34.108 clause 9, with the following exceptions:

System Information Block type 11 (Step 1)

Information Element	Value/remark
SIB12 Indicator	FALSE
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	TRUE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to table 6.1.4 of TS 34.108 for Cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4 of TS 34.108
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cell selection and re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	TDD
- Qrxlevmin	-103 dBm
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

CELL UPDATE (Step 8)

Information Element	Value/remark
U-RNTI	Check to see if set to same U-RNTI assigned during the execution of procedure P6.
Cell update cause	Check to see if it is set to "Cell Reselection"
~~Protocol error info~~	~~Check to see if it is absent or set to FALSE~~
Measured results on RACH	Check to see if it is absent
~~Protocol error information~~	~~Check to see if it is absent~~

CELL UPDATE CONFIRM (Step 9)

Use the message sub-type in default message content defined in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 10)

Only the message type is checked.

8.4.1.4A.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages pertaining to any measurement quantities for cell 4.

After step 7 the UE shall reselect to cell 4 and transmit a CELL UPDATE message on the uplink CCCH of cell 4.

After step 9, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on uplink DCCH AM RLC.

3GPP TSG–T1 Meeting #26
Bangalore, India, Jan 31th – Feb 4th 2005

Tdoc ⌘T1-050062

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1069 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1Rel-5: Correction of 8_4_1_6A for TDD
Source:	⌘	CATT/CCSA
Work item code:	⌘	LCR TDD
Date:	⌘	20/01/2005
Category:	⌘	***F***
Release:	⌘	*Rel-5*

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	1. Some IEs are not correct in MEASUREMENT CONTROL (Step 2), MEASUREMENT REPORT (Step 3) and CELL UPDATE (Step 9).
Summary of change:	⌘	1. To correct the IEs' errors in the messages.
Consequences if not approved:	⌘	The test case will not executed rightly for TDD.

Clauses affected:	⌘	8.4.1.6A			
Other specs affected:	⌘	**Y**	**N**	Other core specifications	⌘
				Test specifications	
		X		O&M Specifications	
Other comments:	⌘	The CR is only connected with TDD test cases.			

8.4.1.6A Measurement Control and Report: Inter-frequency measurement for transition from CELL_DCH to CELL_FACH state (TDD)

8.4.1.6A.1 Definition

8.4.1.6A.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH/ CELL_PCH/URA_PCH state, the UE shall:

1> stop the inter-frequency type measurement reporting assigned in a MEASUREMENT CONTROL message;

1> begin monitoring cells listed in the IE "inter-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11);

1> in CELL_FACH state:

2> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

Reference

3GPP TS 25.331, clause 8.4.1.6.2

8.4.1.6A.3 Test Purpose

1. To confirm that UE ceases inter-frequency type measurement reporting assigned in MEASUREMENT CONTROL message when moving from CELL_DCH state to CELL_FACH.
2. To confirm that the UE begins to monitor the cells listed in "inter-frequency cell info" received in System Information Block type 11 or 12 messages, following a state transition from CELL_DCH state to CELL_FACH state.

8.4.1.6A.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 2 are active.

UE: PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.4.1.6A-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.6A-1

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
PCCPCH RSCP	dBm	-60	-75	-75	-60

The UE is initially in CELL_DCH state. The System Information Block type 12 message is modified with respect to the default settings, so that no measurement tasks are required of the UE.

SS sends a MEASUREMENT CONTROL message to the UE, including cell 4 into the IE "inter-frequency cell info". The IE "CHOICE reporting criteria" in this message is set to "periodic reporting criteria". SS waits for 8 seconds to allow the periodic timer to expire. The UE shall send a MEASUREMENT REPORT message containing IE "inter-

frequency cell measurement results" to report cell 4's PCCPCH RSCP value. SS transmits PHYSICAL CHANNEL RECONFIGURATION message and reconfigures common physical channels. The UE shall move to CELL_FACH state and then return a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS.

SS modifies the contents of Master Information Block (MIB) and System Information Block (SIB) type 12. In SIB 12, cell 4 is added to the cells listed in the "inter-frequency cell info" IE. SS transmit SYSTEM INFORMATION CHANGE INDICATIONmessage to UE. SS waits for 8 seconds to detect any uplink MEASUREMENT REPORT messages. SS verifies that no MEASUREMENT REPORT message(s) are received as a result of inter-frequency measurements. SS then reconfigures the downlink transmission power settings of cell 1 and cell 4 according to the values stated in columns "T1" of table 8.4.1.6A-1. SS waits for the UE to perform cell re-selection. The UE shall transmit a CELL UPDATE message on the uplink CCCH of cell 4, specifying the "cell update cause" IE as "cell re-selection". SS replies with CELL UPDATE CONFIRM message, which includes IE "New C-RNTI", on the downlink DCCH to complete the cell update procedure. The UE shall reply with a UTRAN MOBILITY INFORMATION CONFIRM message.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		System Information Block type 12	PS-DCCH+DTCH_DCH (state 6-10) in cell 1. System Information Block type 12 is modified with respect to the default settings. All measurement and reporting activities are disabled in this message.
2	←		MEASUREMENT CONTROL	SS indicates that the PCCPCH RSCP of cell 4 shall be monitored and reported. SS waits for 8 seconds for the reception of MEASUREMENT REPORT message.
3	→		MEASUREMENT REPORT	UE shall transmit this message to report cell 4's PCCPCH RSCP value.
4	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures common physical channels.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall moves to CELL_FACH state.
6	←		Master Information Block, System Information Block type 12	SS modifies MIB and SIB 12. Cell 4 is included in the IE "inter-frequency cell info"
7	←		SYSTEM INFORMATION CHANGE INDICATION	SS waits for 8 seconds to verify that no MEASUREMENT REPORT messages are detected on the uplink DCCH.
8				SS changes the power settings for cell 1 and cell 4 according to columns marked "T1" of table 8.4.1.6A-1, and then waits for the UE to re-select to a new cell.
9	→		CELL UPDATE	UE shall perform cell re-selection and transmit this message on the new cell.
10	←		CELL UPDATE CONFIRM	See message content.
11	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

System Information Block Type 12 (Step 1)

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN (Nt)	UARFCN of the frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH Info	Set to same as used for cell 4
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- Primary CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	8 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 3)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- CHOICE mode	TDD
- UARFCN(Nt)	Check to see if set to the UARFCN of the frequency for cell 4
~~- UARFCN (uplink)~~	~~Check to see if set to the UARFCN of the uplink frequency for cell 4~~
~~- UARFCN (downlink)~~	~~Check to see if set to the UARFCN of the downlink frequency for cell 4~~
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
~~- Primary CCPCH Info~~	~~Check to see if set to the same for cell 4~~
~~- CPICH RSCP~~	~~Check to see if it is present~~
~~- Pathloss~~	~~Check to see if it is absent~~
- CHOICE mode	TDD
- cell parameters identity	Check to see if set to the same for cell 4
- proposed TGSN	Check to see if it is absent
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- timeslot list	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

If UE do not require compressed mode, use the same message sub-type found in TS 34.108 clause 9, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)".

Master Information Block (Step 12)

Information Element	Value/Remarks
MIB value tag	2

System Information Block type 12 (Step 6)

Information Element	Value/remark
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	Not Present
- New inter-frequency cells	
- Inter-frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to table 6.1.4 of TS 34.108 for Cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH info	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4 of TS 34.108
- Cell selection and re-selection info	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

SYSTEM INFORMATION CHANGE INDICATION (Step 7)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	2

CELL UPDATE (Step 9)

Information Element	Value/remark
U-RNTI	Check to see if same to value assigned in P3 or P5
Cell update cause	Check to see if it is set to "Cell Reselection"
~~Protocol error info~~	~~Check to see if it is absent or set to FALSE~~
Measured results on RACH	Check to see if it is absent
~~Protocol error information~~	~~Check to see if it is absent~~

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 11)

Only the message type is checked.

8.4.1.6A.5 Test Requirement

After step 2 the UE shall transmit MEASUREMENT REPORT message to report cell 4's RSCP value in the IE "inter-frequency cell measured results".

After step 4, the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 5 the UE shall stop sending MEASUREMENT REPORT messages, which contain inter-frequency measured results for cell 4's PCCPCH RSCP value.

After step 8 the UE shall transmit CELL UPDATE message on the uplink CCCH of cell 4, and the "cell update cause" IE shall be set to "cell reselection".

After step 10, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.

3GPP TSG–T1 Meeting #26
Bangalore, India, Jan 31th – Feb 4th 2005

Tdoc ⌘T1-050063

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CHANGE REQUEST

⌘ **34.123-1** **CR** 1070 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1Rel-5: Correction of 8_4_1_8A for TDD
Source:	⌘	CATT/CCSA
Work item code:	⌘	LCR TDD
Date:	⌘	20/01/2005
Category:	⌘	***F***
Release:	⌘	*Rel-5*

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	1. In Expected Sequence, There should be a MEASUREMENT REPORT for cell 5 between step 9 and step 11. 2. In Expected Sequence, the contents for compressed mode are redundant. 3. There are errors of the IEs in the messages.
Summary of change:	⌘	1. In Expected Sequence, step 10a of a MEASUREMENT REPORT for cell 5 is added. 2. In Expected Sequence, the contents for compressed mode are deleted. 3. The errors of the IEs in the messages are corrected.
Consequences if not approved:	⌘	The test case will not executed rightly for TDD.

Clauses affected:	⌘	8.4.1.8A

Other specs affected:	⌘	Y	N		⌘
				Other core specifications	
		X		Test specifications	
				O&M Specifications	

Other comments:	⌘	The CR is only connected with TDD test cases.

8.4.1.8A Measurement Control and Report: Inter-frequency measurement for transition from CELL_FACH to CELL_DCH state (TDD)

8.4.1.8A.1 Definition

8.4.1.8A.2 Conformance requirement

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 12 (or System Information Block type 11);

1> retrieve each set of measurement control information of measurement type "inter-frequency" stored in the variable MEASUREMENT_IDENTITY; and

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH":

2> resume the measurement reporting.

Reference

3GPP TS 25.331 clause 8.4.1.7.2, 8.4.1.3

8.4.1.8A.3 Test Purpose

1. To confirm that the UE stops monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 or 12 when it transits from CELL_FACH state to CELL_DCH state.

2. To confirm that the UE resumes inter-frequency measurements and reporting stored for which the measurement control information has IE "measurement validity" assigned to the value "CELL_DCH", after it re-enters CELL_DCH state from CELL_FACH state.

8.4.1.8A.4 Method of test

Initial Condition

System Simulator: 3 cells – Cells 1, cell 4 and cell 5 are active.

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

In case the UE supports both PS and CS CN domains, this test shall be run twice, once starting from the initial condition CS-DCCH+DTCH_DCH, and once starting from the initial condition PS-DCCH+DTCH_DCH.

Test Procedure

Table 8.4.1.8A-1 illustrates the downlink power to be applied for the 3 cells in this test.

Table 8.4.1.8A-1

Para-meter	Unit	Cell 1	Cell 4	Cell 5
UTRA RF Channel Number		Ch. 1	Ch. 2	Ch. 2
PCCPCH RSCP	dBm	-60	-75	-75

Test procedure when the initial condition is that the UE is connected to the PS domain or CS:

The UE is in CELL_DCH state in cell 1 (step 1). SS transmits MEASUREMENT CONTROL message to add cell 5 into the IE "inter-frequency cell info" (step 2). SS checks that UE transmit this message, or else SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 3).

SS sends a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH to move the UE to CELL_FACH state (step 4). The UE shall reconfigure itself to receive and transmit using the common physical channels assigned, and send PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH (step 5). SS modifies the content of Master Information Block and System Information Block type 12 messages, such that cell 4 is added in the list of cells assigned in the IE "inter-frequency cell info" (step 6). SS transmits SYSTEM INFORMATION CHANGE INDICATION message to UE. Once again, SS verifies that the UE does not transmit MEASUREMENT REPORT messages in the uplink direction (step 7).

SS sends PHYSICAL CHANNEL RECONFIGURATION message, and configures dedicated physical only in the PS case (step 8). The UE shall move to CELL_DCH state and then reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 9). SS waits for 10 seconds. The UE shall transmit 1 MEASUREMENT REPORT message, containing the selected frequency quality estimate (in this case PCCPCH RSCP) of cell 4. The UE shall also report the triggering of event '2c' in the IE "Event results" of MEASUREMENT REPORT message (step 10).

SS transmits a MEASUREMENT CONTROL message on the downlink DCCH using AM-RLC (step 10). The UE shall transmit MEASUREMENT REPORT messages at 2 seconds interval (step 12).

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				(Valid for both the PS and CS cases) The initial state of UE is in CELL_DCH state of cell 1.
2	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS specifies inter-frequency measurement and reporting parameters for cell 5, with "measurement validity" IE present and "UE state" set to "CELL_DCH".
3	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) SS checks that UE transmit this message, ~~or else SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH.~~
4	←		PHYSICAL CHANNEL RECONFIGURATION	(Only in the PS case) SS moves the UE to CELL_FACH state.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Only in the PS case) UE shall move to CELL_FACH state.
6	←		Master Information Block System Information Block type 12	(Only in the PS case) SS modifies MIB and SIB 12 in order to include cell 4 into the list of cells in IE "inter-frequency cell info".
7	←		SYSTEM INFORMATION CHANGE INDICATION	(Only in the PS case) After SS transmits this message, SS confirms that there are no transmissions of MEASUREMENT REPORT message in the uplink direction.
8	←		PHYSICAL CHANNEL RECONFIGURATION	(Valid for ~~both~~ the PS ~~and CS~~ cases) SS moves the UE to CELL_DCH state.~~For the CS case, this step only applies only if the UE requires compressed mode. See specific message content below.~~
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Valid only in the PS case) UE shall move to CELL_DCH state.
10	→		MEASUREMENT REPORT	(Valid for ~~both the~~ PS ~~and CS~~ cases) UE shall resume inter-frequency measurement task for cell 4 and report the measured PCCPCH RSCP value for cell 4.

Step	Direction		Message	Comment
	UE	SS		
10 a	→		MEASUREMENT REPORT	(Valid for PS cases) UE shall resume inter-frequency measurement task for cell 5 and report the measured PCCPCH RSCP value for cell 5. The order of steps 10 and 10a could be reversed.
11	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS changes the reporting criteria for cell 5 to 'periodic reporting'
12	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) UE shall begin to transmit this message at 2 seconds interval.

Specific Message Content

Unless explicitely stated, the messages below shall be used for both the CS case and the PS case.

MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	UARFCN of the frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH Info	Set to same code as used for cell 5
- Cells for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- Primary CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
~~- Reporting cell status~~	~~Not present~~
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	
-UE autonomous update	On with no reporting
- Non autonomous update mode	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	1.0 dB
- Time to trigger	10 seconds
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non-used frequency	0.0
DPCH compressed mode status info	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in TS 34.108 clause 9 titled "(Packet to CELL_FACH from CELL_DCH in PS)".

Information Element	Value/Remark
- Downlink information for each radio link	
- Choice mode	TDD
- Primary CCPCH info	For cell 1. Ref. to the Default setting in TS34.108 clause 6.1 (TDD)
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	Not Present
- SCCPCH Information for FACH	Not Present

Master Information Block (Step 6)

Information Element	Value/Remark
Value Tag	2

System Information Block type 12 (Step 6)

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	TRUE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
-Use of HCS	Not used
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cells removal	Not Present
- New inter-frequency info list	
- Inter-frequency cell id	Set to id of cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Cell selection and Re-selection info	Not Present – use default values
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 8 only for the PS case)

UE will use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

MEASUREMENT REPORT (Step 10)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- CHOICE mode	TDD
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- CHOICE mode	TDD
- Cell parameters Id	Check to see if it's the same for cell 4
- Timeslot ISCP	Check to see if it is absent
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH Info	Check to see if set to the same code for cell 4
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	
- CHOICE event result	Inter-frequency event results
- Inter-frequency event identity	Check to see if it's set to '2c'
- Inter-frequency cells	
- Frequency Info	
- CHOICE mode	TDD
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 4
- Non frequency related measurement event results	
- Primary CCPCH Info	Check to see if set to the same for cell 4

MEASUREMENT REPORT (Step 10a)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- CHOICE mode	TDD
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- CHOICE mode	TDD
- Cell parameters Id	Check to see if it's the same for cell 5
- Timeslot ISCP	Check to see if it is absent
- Proposed TGSN	Check to see if it is absent

- Primary CCPCH Info	Check to see if set to the same code for cell 5
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	
- CHOICE event result	Inter-frequency event results
- Inter-frequency event identity	Check to see if it's set to '2c'
- Inter-frequency cells	
- Frequency Info	
- CHOICE mode	TDD
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 5
- Non frequency related measurement event results	
- Primary CCPCH Info	Check to see if set to the same for cell 5

MEASUREMENT CONTROL (Step 11)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Set up
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- CHOICE mode	TDD
- UARFCN uplink (Nt)	UARFCN of the frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH Info	Set to same as used for cell 5
- Cells for measurement	
- Inter-frequency cell id	5
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CHOICE mode	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not Present
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	2000 milliseconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if it is absent
- CHOICE mode	TDD
- Cell parameters Id	Check to see if it's the same for cell 5
- Timeslot ISCP	Check to see if it is absent
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH Info	Check to see if set to the same for cell 5
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- CFN-SFN observed time difference	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

8.4.1.8A.5 Test Requirement

After step 2,. UE shall send a MEASUREMENT REPORT message on the uplink DCCH of cell 1.

After step 4 and 8, UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit a MEASUREMENT REPORT message, containing the IE "measured results" reporting cell 5's PCCPCH RSCP value in CS case and cell ~~4's~~ 5's PCCPCH RSCP value in the PS case. The UE shall also report the triggering of event '2c' by including IE "Event results" in the MEASUREMENT REPORT message.

After step 11 the UE shall send MEASUREMENT REPORT messages, containing cell 5's PCCPCH RSCP measured value in IE "Measured results" at 2 seconds interval. The "Event results" IE shall be omitted in these messages.

MEASUREMENT CONTROL (Step 11)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Set up
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nt)	UARFCN of the frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	TDD
- Primary CCPCH Info	Set to same as used for cell 5
- Cells for measurement	
- Inter-frequency cell id	5
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	PCCPCH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CHOICE *mode*	TDD
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not Present
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	2000 milliseconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN	Check to see if set to the UARFCN of the frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if it is absent
- CHOICE mode	TDD
- Cell parameters Id	Check to see if it's the same for cell 5
- Timeslot ISCP	Check to see if it is absent
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH Info	Check to see if set to the same for cell 5
- PCCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- CFN-SFN observed time difference	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

8.4.1.8A.5 Test Requirement

After step 2,. UE shall send a MEASUREMENT REPORT message on the uplink DCCH of cell 1.

After step 4 and 8, UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit a MEASUREMENT REPORT message, containing the IE "measured results" reporting cell 5's PCCPCH RSCP value in CS case and cell ~~4's~~ 5's PCCPCH RSCP value in the PS case. The UE shall also report the triggering of event '2c' by including IE "Event results" in the MEASUREMENT REPORT message.

After step 11 the UE shall send MEASUREMENT REPORT messages, containing cell 5's PCCPCH RSCP measured value in IE "Measured results" at 2 seconds interval. The "Event results" IE shall be omitted in these messages.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050071

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1071 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to Package 4 RRC test case 8.1.2.3 & Package 1 RRC test case 8.1.2.9
Source:	⌘	Nokia, ETSI MCC160
Work item code:	⌘	TEI
Date:	⌘	14/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	A UE in manual attach mode may trigger a detach procedure when it moves from RRC Connected mode to RRC Idle mode.
Summary of change:	⌘	Handling of the detach procedure would have too much impact on the prose & TTCN of these already approved test cases. Therefore it is proposed that for manual Class A UE's these two test cases should be executed in the CS domain only.
Consequences if not approved:	⌘	The test case will fail a conformant UE.

Clauses affected:	⌘	8.1.2.3, 8.1.2.9

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	This CR aligns the prose with the TTCN (see T1s040726 & T1s040730).

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.2.3 RRC Connection Establishment: Failure (V300 is greater than N300)

8.1.2.3.1 Definition

8.1.2.3.2 Conformance requirement

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists).

Upon initiation of the procedure, the UE shall:

1> set the IE "Initial UE identity" in the variable INITIAL_UE_IDENTITY according to TS 25.331 subclause 8.5.1;

1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;

1> set counter V300 to 1; and

1> start timer T300 when the MAC layer indicates success or failure to transmit the message;

1> select a Secondary CCPCH according to TS 25.304;

1> start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

1> set the IE "Initial UE identity" to the value of the variable INITIAL_UE_IDENTITY;

…

1> if the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY; and

1> if cell re-selection or expiry of timer T300 occurs:

the UE shall:

1> check the value of V300; and

2> if V300 is equal to or smaller than N300:

…

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

…

3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH;

3> increment counter V300;

3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.

…

2> if V300 is greater than N300:

3> enter idle mode.

3> consider the procedure to be unsuccessful;

3> Other actions the UE shall perform when entering idle mode from connected mode are specified in TS 25.331 subclause 8.5.2;

3> the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.3.3 Test purpose

To confirm that the UE stops retrying to establish the RRC connection if V300 is greater than N300 and goes back to idle mode.

8.1.2.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. A Class A UE in manual mode will execute this test case on the CS domain.

Specific Message Contents

SYSTEM INFORMATION TYPE 1

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

- UE Timers and constants in idle mode -T300	 2000 milliseconds

Test Procedure

Before the test starts, SS initializes an internal counter K to 0. The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by an outgoing call operation. SS shall not respond to any RRC CONNECTION REQUEST message, instead the counter K is increased by 1 every time such a message is received. To arrive at the verdict, the SS checks that a total of (N300+1) such messages are received. SS calls for generic procedure C.1 to check that UE is in Idle Mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initializes counter K to 0 and then prompts the operator to make an outgoing call.
2	→		RRC CONNECTION REQUEST	
3				SS increments K by 1.
4				If K is greater than N300, goes to step 5 else proceed to step 2.
5				SS monitor the uplink CCCH for a time period enough for UE to go~~es~~ back to idle state. SS waits for 5s.
6	←→		CALL C.1	If the test result of C.1 indicates that UE is in Idle Mode state, the test passes, otherwise it fails.

Specific Message Contents

None

8.1.2.3.5 Test requirement

After step 5, counter K shall be equal to (N300+1) and there shall be no uplink transmission in the monitoring period specified in step 5.

8.1.2.9 RRC Connection Establishment: Success after Physical channel failure and Failure after Invalid configuration

8.1.2.9.1 Definition

8.1.2.9.2 Conformance requirement

If the UE failed to establish, per TS 25.331 subclause 8.5.4, the physical channel(s) indicated in the RRC CONNECTION SETUP message.

After having received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL_UE_IDENTITY.

Before the RRC CONNECTION SETUP COMPLETE message is delivered to lower layers for transmission,

the UE shall:

1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> check the value of V300, and:

2> if V300 is equal to or smaller than N300:

3> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

3> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

3> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;

3> increment counter V300; and

3> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.

2> if V300 is greater than N300:

…

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL_UE_IDENTITY; and

the variable INVALID_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message:

the UE shall:

1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS and proceed as below;

1> if V300 is equal to or smaller than N300:

2> set the variable PROTOCOL_ERROR_INDICATOR to TRUE;

2> set the IEs in the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

2> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13; and

2> apply the given Access Service Class when accessing the RACH;

2> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;

2> increment counter V300; and

2> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.

1> if V300 is greater than N300:

…

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.9.3 Test purpose

1. To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 when a physical channel failure occurs because SS does not configure the physical channel that is specified in the transmitted RRC CONNECTION SETUP message.
2. To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 when the transmitted RRC CONNECTION SETUP message causes invalid configuration in the UE.

8.1.2.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE. A Class A UE in manual mode will execute this test case on the CS domain.

Test Procedure

Before the test starts,SYSTEM INFORMATION BLOCK TYPE 1 is modified and this modification is notified to the UE. An internal counter K in SS is initialised to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH, after the operator attempts to make an outgoing call. SS increments K every time such a message is received. Then, SS shall send a RRC CONNECTION SETUP message that contains an invalid configuration. UE shall then send RRC CONNECTION REQUEST message to SS again. This cycle is repeated until K reaches N300+1. When K is equal to N300+1, the SS again transmits an RRC CONNECTION SETUP message including an invalid configuration. Upon receiving this message the UE shall not send another RRC CONNECTION REQUEST message.

Next the SS re-initialises the internal counter K to value = 0, after which the operator attempts to make another outgoing call. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH. SS increments K every time such a message is received. SS transmits an RRC CONNECTION SETUP message to make the UE configure the physical channel in order to communicate on the DCCH but SS does not configure the physical channel. Then the UE detects the physical channel failure and transmits an RRC CONNECTION REQUEST message. This cycle is repeated until K reaches N300+1. When K is equal to N300+1, the SS transmits the RRC CONNECTION SETUP message and configures the physical channel. The UE shall detect "in-sync" from physical layer and then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
				SS waits 5s (to ensure that the UE waits for the new value tag before re-reading system information)
0a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 1 messages. See specific message contents.
				SS waits 5s (to ensure that the UE has time to read the new system information)
1				SS initialises counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
2		→	RRC CONNECTION REQUEST	See specific message contents.
2a				SS increments K by 1 for every RRC CONNECTION REQUEST message received in step 2
2b		←	RRC CONNECTION SETUP	See specific message contents.
3				SS checks to see if K is equal to N300+1. If so, goes to step 3a. Else, continues to execute step 2.
3a				SS waits to verify that the UE does not send any further RRC CONNECTION REQUEST message
3b				SS re-initialises counter K to 0. Operator is asked to make another outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3c		→	RRC CONNECTION REQUEST	See specific message contents.
3d				SS increments K by 1 for every RRC CONNECTION REQUEST message received in step 3c

3e			SS checks to see if K is equal to N300+1. If so, goes to step 6. Else, continues to execute step 4
4	←	RRC CONNECTION SETUP	Use the default message with the same message sub-type specified in clause 9 in TS 34.108. SS does not configure the physical channel.
5			The next step is step 3c.
6	←	RRC CONNECTION SETUP	Use the default message with the same message sub-type specified in clause 9 in TS 34.108. SS configures the physical channel.
7			The UE configures the layer 1 and layer 2.
8	→	RRC CONNECTION SETUP COMPLETE	Use the default message with the same message sub-type specified in clause 9 in TS 34.108.

Specific Message Contents

PAGING TYPE 1 (Step 0)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	
- MIB Value Tag	Set to (Current MIB value tag + 1)
- BCCH Modification time	Not Present

SYSTEM INFORMATION TYPE 1 (Step 0a)

Use the default parameter values for the system information block with the same type specified in clause 6.1.0b of TS 34.108, with the following exceptions:

- UE Timers and constants in idle mode	
-T300	2000 milliseconds
-N300	3
-T312	10 seconds
- N312	1

RRC CONNECTION REQUEST (Step 2 & step 3c, K=0)

The same message sub-type found in clause 9 of TS 34.108 applies, with the following exceptions:

Information Element	Value/remark
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Originating Interactive Call or Originating Background Call or Originating Streaming Call or Originating Conversational Call

RRC CONNECTION REQUEST (Step 2 & step 3c, K>0)

The same message sub-type found in clause 9 of TS 34.108 applies, with the following exceptions:

Information Element	Value/remark
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Originating Interactive Call or Originating Background Call or Originating Streaming Call or Originating Conversational Call
Protocol error indicator	Not Checked

RRC CONNECTION SETUP (Step 2b)

Use the same message sub-type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH info	Not present

8.1.2.9.5 Test requirement

After step 3a the UE shall not send any further RRC CONNECTION REQUEST message.

After step 8 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050074

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1072 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to HSDPA RRC test cases 8.2.2.36, 8.2.2.37 & 8.2.2.38
Source:	⌘	Nokia, ETSI MCC160
Work item code:	⌘	TEI
Date:	⌘	10/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

- 8.2.2.36:
  - The Radio Bearer Reconfiguration message at step 4 must provide a new H-RNTI identity, otherwise the UE will not start HS-DSCH reception.
  - For the Radio Bearer mapped on top of HS-DSCH the default RB Identity is now 25 (see T1-050072).
  - The IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose.
- 8.2.2.37:
  - At step 6 of the prose the value for the IE 'DL Scrambling Code' is missing.
  - For the Radio Bearer mapped on top of HS-DSCH the default RB Identity is now 25 (see T1-050072).
  - The IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose.
- 8.2.2.38:
  - For the Radio Bearer mapped on top of HS-DSCH the default RB Identity is now 25 (see T1-050072).
  - At step 1, the serving HS-DSCH radio link must be provided, otherwise the UE will stop HS-DSCH reception.
  - The IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose.

Summary of change:	⌘	• 8.2.2.36: o At step 4, include the IE 'New H-RNTI'. o Change the RB Id from 23 into 25. o At steps 1 & 4 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment'. • 8.2.2.37: o At step 6 set the IE 'DL Scrambling Code' to 'Not Present'. o Change the RB Id from 23 into 25. o At steps 4 & 4 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment'. • 8.2.2.38: o Change the RB Id from 23 into 25. o At step 1 set the IE 'Serving HS-DSCH radio link indicator' to TRUE. o At steps 4 & 6 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment'.
Consequences if not approved:	⌘	The test case will fail a conformant UE.

Clauses affected:	⌘	8.2.2.36, 8.2.2.37, 8.2.2.38			
Other specs affected:	⌘	**Y** / **N** ☐ / **X** Other core specifications ☐ / **X** Test specifications ☐ / **X** O&M Specifications		⌘	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2.36 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Start and stop of HS-DSCH reception)

8.2.2.36.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.36.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25, 8.6.3.1

8.2.2.36.3 Test purpose

To confirm that the UE starts and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.36.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to stop the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to start the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Stop of HS-DSCH reception
2				At the activation time, SS stops HS-DSCH transmission to the UE.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	
4	←		RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception
5				At the activation time, SS resumes HS-DSCH transmission to the UE.
6	→		RADIO BEARER RECONFIGURATION COMPLETE	
	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (step 1)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following.

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
Added or Reconfigured DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	Not Present
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	Not Present
- MAC-hs queue to delete list	
- MAC-hs queue Id	0
- DCH quality target	Not Present

RADIO BEARER RECONFIGURATION (step 4)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
Added or Reconfigured DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	Not Present
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	
- MAC-hs queue Id	0
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not Present
- DCH quality target	Not Present
Downlink information for each radio link	
- Serving HS-DSCH radio link indicator	TRUE

8.2.2.36.5 Test requirements

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 5, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

8.2.2.37 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_FACH and from CELL_FACH to CELL_DCH: Success (start and stop of HS-DSCH reception)

8.2.2.37.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.37.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> clear any stored IE “Downlink HS-PDSCH information”;

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25

8.2.2.37.3 Test purpose

To confirm that the UE transits to CELL_FACH state from CELL_DCH state and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

To confirm that the UE transits to CELL_DCH state from CELL_FACH state and starts receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.37.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_FACH state and SS establishes a radio bearer mapped on HS-DSCH by transmitting a RADIO BEARER SETUP message. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it

stops HS-DSCH reception, moves to CELL_FACH state and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Then, SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it moves to CELL_DCH state, resumes HS-DSCH reception and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	←		ACTIVATE PDP CONTEXT ACCEPT	
4	←		RADIO BEARER RECONFIGURATION	Stop of HS-DSCH reception and transit to CELL_FACH state,
5	→		RADIO BEARER RECONFIGURATION COMPLETE	
6	←		RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception and transit to CELL_DCH state
7	→		RADIO BEARER RECONFIGURATION COMPLETE	
8	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 1)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_FACH in PS" in 34.108.

RADIO BEARER RECONFIGURATION (Step 4)

Use the same message as specified for "Packet to CELL_FACH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present

- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1

- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

RADIO BEARER RECONFIGURATION (Step 6)

Use the same message as specified for "Packet to CELL_DCH from CELL_FACH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
- RB stop/continue	Not Present
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	Not Present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	1
- Measurement Feedback Info	
- CHOICE mode	FDD
- POhsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	-3 dB
- CHOICE mode	FDD (no data)
Downlink information for each radio link	
- Serving HS-DSCH radio link indicator	TRUE

8.2.2.37.5 Test requirements

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 6, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

8.2.2.38 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success (with active HS-DSCH reception)

8.2.2.38.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.38.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.6.3.1, 8.2.2.3, 8.5.25

8.2.2.38.3 Test purpose

To confirm that the UE reconfigures the radio bearer while being mapped to HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.38.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it reconfigures the radio bearer and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
Downlink information for each radio link	
- Serving HS-DSCH radio link indicator	TRUE

8.2.2.38.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

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Tdoc ⌘T1-050098

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1073 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to Package 4 GMM test case 12.9.7c
Source:	⌘	Aeroflex
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The test requirement is not following the expected table. The test is operated in network operation mode II, so the combined attach is not possible. Steps 4 and 12 shall be changed from 'combined attach' to 'PS attach' as per the expected sequence.
Summary of change:	⌘	In the test requirements, steps 4 and 12 are changed from 'combined attach' to 'PS attach'.
Consequences if not approved:	⌘	The expected sequence and the test requirement clauses will not be consistent.

Clauses affected:	⌘	12.9.7c.5

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	This CR does not have impact on TTCN

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of Modification>

12.9.7c Service Request / rejected / Roaming not allowed in this location area

12.9.7c.1 Definition

12.9.7c.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Roaming not allowed in this location area", the UE shall:

1) set the PS update status to GU3 ROAMING NOT ALLOWED

2) store the LAI in the list of "forbidden location areas for roaming".

3) perform a PLMN selection.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Roaming not allowed in this location area".

12.9.7c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a Service request with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE shall not perform PS attach procedure when the UE enters a different location area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
6	SS			The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8		->	SERVICE REQUEST	Service type = "signalling"
9		<-	SERVICE REJECT	Reject cause = "roaming not allowed in this location area"
9a	SS			The SS releases the RRC connection.
10	UE			The UE performs PLMN selection.
11	SS			Set the cell type of cell A to the " Non-Suitable cell". Set the cell type of cell B to the " Serving cell". (see note)
12	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
13	SS			Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the " Serving cell". (see note) The following messages are sent and shall be received on cell C.
13a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
14a		<-	AUTHENTICATION AND CIPHERING REQUEST	
14b		->	AUTHENTICATION AND CIPHERING RESPONSE	
14c	SS			The SS starts integrity protection.

15	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-2
16	->	ROUTING AREA UPDATE COMPLETE	
17	UE		The UE is switched off or power is removed (see ICS).
18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS Detach'
18a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 18.
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.9.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the ~~combined~~ PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE enters a same location area, UE shall:

- not initiate the ~~combined~~ PS attach procedure.

At step14, when the UE enters a different location area, UE shall:

- initiate the routing area updating procedure with information elements specified in the above Expected Sequence.

<End of Modification>

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Bangalore, India, 31 Jan - 04 Feb 2005

Tdoc ⌘T1-050107

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1074 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Editorial correction to P1 GMM test case 12.9.1
Source:	⌘	Aeroflex
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The test procedure is requesting SS to perform the authentication procedure after SERVICE REQUEST. This is not following the expected sequence which is expecting SS to send a SERVICE REJECT message.
Summary of change:	⌘	In the test procedure, replace “the SS performs authentication procedure” by “the SS sends a SERVICE REJECT message”.
Consequences if not approved:	⌘	Test prose would be incorrect.

Clauses affected:	⌘	12.9.1.4

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This CR does not have impact on TTCN.

How to create CRs using this form:
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Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of Modification>

12.9.1 Service Request Initiated by UE Procedure

12.9.1.1 Definition

12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

12.9.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE in PMM-IDLE state sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receives the SERVICE REQUEST message~~, the SS performs authentication procedure~~, the SS sends a SERVICE REJECT message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
6a	SS			The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9	->		Void	
9a	SS			The SS releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a			Void	
11			Void	
11a			Void	
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

12.9.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE has any signalling message (e.g. for SM or SMS) that requires security protection, the UE shall:

- send the SERVICE REQUEST message with service type indicated "signalling".

<End of Modification>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050127

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1075** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 MAC test case 7.1.3.1
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘[H	Mismatch between contents of Radio Bearer Setup message defined in 34.108 section 9.1.1 and TTCN implementation for the test case 7.1.3.1. For RB20 TTCN test case implementation sets IE “Re-establishment timer“ to value “useT314“ and "MAC logical channel priority“ to “7“, whereas default message contents defined in 34.108, section 9.1.1 define the above values to “useT315“ and “8“. For RB10 TTCN test case implementation sets “UL Logical Channel Identity” and “DL Logical Channel Identity” to value “7“, whereas default message contents defined in 34.108, section 9.1.1 define the above value as “Not Present“
Summary of change:	⌘	Added content for Radio Bearer Setup message to the section 7.1.3.1.4 to explicitly define Re-establishment timer value, MAC logical channel priority, UL Logical Channel Identity and DL Logical Channel Identity value to be used for this test case.
Consequences if not approved:	⌘	Mismatch between 34.123-1 and TTCN implementation.

Clauses affected:	⌘	Section 7.1.3.1.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects Rel-5, Rel-4 and R99 UEs.

	This CR aligns the prose to the TTCN.

How to create CRs using this form:
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

7.1.3 Priority handling between data flows of one UE

7.1.3.1 Priority handling between data flows of one UE

7.1.3.1.1 Definition and applicability

7.1.3.1.2 Conformance requirement

When selecting between the Transport Format Combinations in the given Transport FormatCombination Set, priorities of the data flows to be mapped onto the corresponding Transport Channels can be taken into account.

The chosen TFC shall be selected from within the set of valid TFCs and shall satisfy the following criteria in the order in which they are listed below:

1. No other TFC shall allow the transmission of more highest priority data than the chosen TFC.
2. No other TFC shall allow the transmission of more data from the next lower priority logical channels. Apply this criterion recursively for the remaining priority levels.
3. No other TFC shall have a lower bit rate than the chosen TFC.

The above rules for TFC selection in the UE shall apply to DCH, and the same rules shall apply for TF selection on RACH and CPCH.

Reference(s)

TS 25.301 clause 5.3.1.2.

TS 25.321, clause 11.4.

7.1.3.1.3 Test purpose

To verify that the UE prioritise signalling compared to data on a lower priority logical channel.

7.1.3.1.4 Method of test

Initial conditions

System Simulator:

- 1 cell, default parameters, Ciphering Off.

User Equipment:

- The UE shall operate under normal test conditions, Ciphering Off.
- The Test-USIM shall be inserted.

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS 34.108) is executed, with all the parameters as specified in the procedure, with the exception that the default Radio Access Bearer is replaced with the RAB defined for UM 7-bit "Length Indicator" tests described in 3G TS 34.108 clause 6.11.1 is used.

For radio bearer setup the following settings shall be used in both CS and PS mode:

- Re-establishment Timer: useT314
- MAC logical channel priority: 7
- UL Logical Channel Identity:7

- DL Logical Channel Identity:7

Let UM_7_PayloadSize denote the RAB payload size in octets.

Related ICS/IXIT Statement(s)

None

Test procedure

a. The SS closes the test loop using UE test loop mode 1 with the UL SDU size set to (UM_7_PayloadSize * 25) - 1 bytes. See note 1.

b. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message using AM_RLC on the DCCH, which indicates that only transport format minimum set is allowed on the uplink for DCH transport channel on the DTCH. I.e. the restricted uplink transport format set shall be (DCCH, UM RLC 7 bit LI RB)=(TF0, TF0), (TF1, TF0) and (TF0, TF1).

c. The SS transmits a MEASUREMENT CONTROL message requesting periodic reporting with a period of 250ms.

d. The SS sends one RLC SDUs of size floor (UM_7_PayloadSize) - 1 bytes to the UE. The UE is expected to loop this data back in one RLC SDU, segmented into a total of 25 RLC PDUs.

e. The SS waits until data is returned in uplink.

f. The SS checks that the UE transmits alternating measurement reports and data.

Note 1. Having UE to return 25 PDUs corresponds to 25*TTI (40 ms) = 1 second of continous data transmission. As the periodic measurement interval is 250ms this will guarantee that data transmission will be interupted by transmission of measurement reports in uplink.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		ACTIVATE RB TEST MODE (DCCH)	TC
2	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
3	<--		RADIO BEARER SETUP (DCCH)	RRC
4	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
5	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 with UL RLC SDU size parameter set to achieve UE to transmit 25 PDUs in uplink.
6	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
7	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to transport format minimum set (DCCH, AM RLC 7 bit LI RB)=(TF0, TF0), (TF1, TF0) and (TF0, TF1).
8	<--		MEASUREMENT CONTROL (DCCH)	SS sends a MEASUREMENT CONTROL message requesting periodic reporting at 250 ms interval.
9	<--		Downlink RLC PDU	SS sends a SDU fit into one PDU.
10	-->		Uplink RLC PDUs	SS starts receiving RLC PDUs from the UE on the UM RLC RB
11	-->		MEASUREMENT REPORT (DCCH)	SS checks that at least one MEASUREMENT REPORT message is received within 500 ms (=2 x reporting interval)
12	-->		Uplink RLC PDUs	SS checks that UE resumes returning RLC PDUs from the UE on the UM RLC RB

7.1.3.1.5 Test requirements

1. After step 10 the UE shall transmit a MEASUREMENT REPORT message within 500 ms.

2. After step 11 the UE shall resume data transmission.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050128

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1076** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Radio Bearer Setup used for RLC testing
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘[H	Mismatch between contents of Radio Bearer Setup message defined in 34.108 section 9.1.1 and TTCN implementation for RLC testing. For RB10 TTCN test case implementation sets “UL Logical Channel Identity” and “DL Logical Channel Identity” to value “7“, whereas default message contents defined in 34.108, section 9.1.1 define the above value as “Not Present“
Summary of change:	⌘	In section 7.2.0.1 explicitly define UL Logical Channel Identity and DL Logical Channel Identity value to be used for RLC Testing.
Consequences if not approved:	⌘	Mismatch between 34.123-1 and TTCN implementation.

Clauses affected:	⌘	Section 7.2.0.1

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects Rel-5, Rel-4 and R99 UEs. This CR aligns the prose to the TTCN.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

7.2 RLC testing

7.2.0 General

7.2.0.1 Radio bearer setup

For radio bearer setup the following settings shall be used in both CS and PS mode:

- Re-establishment Timer: useT314
- MAC logical channel priority: 7
- UL Logical Channel Identity:7
- DL Logical Channel Identity:7

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050160
Agenda 8.8.3

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1079** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF low priority RRC test cases
Source:	⌘	Motorola and MCC 160
Work item code:	⌘	TEI
Date:	⌘	18-Jan-05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Reference for Default message contents for System Information Blocks is specified as 'clause 9 of 34.108'. It should be 'clause 6.1'
Summary of change:	⌘	Reference to clause 9 of 34.108 replaced with clause 6.1
Consequences if not approved:	⌘	Specification remains incorrect

Clauses affected:	⌘	8.1.3.6, 8.2.1.14, 8.2.1.18, 8.2.1.23, 8.2.3.17, 8.2.4.19, 8.2.4.25, 8.2.6.18 & 8.2.6.33

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.1.3.6 RRC Connection Release in CELL_DCH state (Frequency band modification): Success

8.1.3.6.1 Definition

8.1.3.6.2 Conformance requirement

If the UE first receives an RRC CONNECTION RELEASE message in CELL_DCH state, it shall:

- initialize the counter V308 to zero;
- submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using UM RLC on the DCCH to the UTRAN;
- start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.

If the timer T308 expires, the UE shall:

- increment V308 by one;
- if V308 is equal to or smaller than N308:
  - retransmit the RRC CONNECTION RELEASE COMPLETE message;
- if V308 is greater than N308:
  - release all its radio resources;
  - enter idle mode;
  - perform cell-selection according to TS25.304;
  - procedure end;

Reference

3GPP TS 25.331 clause 8.1.4.

8.1.3.6.3 Test purpose

To confirm that when the UE receives an RRC CONNECTION RELEASE message the UE transmits N308+1 RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH.

To confirm that the UE enters into idle mode with performing cell-selection and selecting new cell configured by SS.

8.1.3.6.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE

Specific Message Content

For system information block 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
- SIB12 indicator	FALSE
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- New inter-frequency cell id	
- Inter frequency cell id	6
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 25.101
- UARFCN downlink(Nd)	Reference to table 6.1.2 of TS34.108 for Cell 6
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.6 (FDD)" in clause 6.1.4 of TS34.108
- Primary CPICH Tx power	Not present
- Cell Selection and Re-selection Info	
- $Qoffset1_{s,n}$	0dB
- Qoffset2s,n	Not present
- Maximum allowed UL TX power	Reference to table 6.1.1
- HCS neighbouring cell information	Not present
- CHOICE mode	FDD
- Qqualmin	Reference to table 6.1.1
- Qrxlevmin	Reference to table 6.1.1
- Cells for measurement	Not present

System Information Block type 11 (TDD)

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
- SIB12 indicator	FALSE
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- New inter-frequency cell id	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 for Cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH info	Reference clause 6.1,TS34.108,Default settings for cell 4
- Cell parameters ID	Reference clause 6.1,TS34.108,Default settings for cell 4
- Primary CPICH TX power	Not present
- Timeslot list	Not present
- Cell Selection and Re-selection Info	Not present For neigbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent.
- $Qoffset1_{s,n}$	0dB
- Maximum allowed UL TX power	Reference to table 6.1.6, TS34.108
- HCS neighbouring cell information	Not present
- CHOICE mode	TDD
- Qrxlevmin	Reference to table 6.1.6, TS 34.108
- Cells for measurement	Not present

Test Procedure

Table 8.1.3.6

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-55	-55	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	Off	-55

Table 8.1.3.6 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.1.3.6. The SS switches its downlink transmission power settings to columns "T1". The SS modify contents of SIB3 in cell 6. The SS transmits an RRC CONNECTION RELEASE message. After the SS transmits an RRC CONNECTION RELEASE message to the UE, the SS waits for the UE to transmit RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH and checks to see if N308+1 such messages has been received. The UE leaves connected mode and enters idle mode in cell 1. The UE shall perform cell reselection and camp on cell 6 after reading the system information. The SS calls for generic procedure C.1 to check that UE is in Idle state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.1.3.6.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.1.3.6.
3			Void	
4			Void	
5	←		System Information Block type 3	The SS modifies SIB 3 in cell 1 to indicate that the cell is barred.
6				The SS waits for 5 s.
7	←		RRC CONNECTION RELEASE	
8	→		RRC CONNECTION RELEASE COMPLETE	The SS waits for the arrival of N308+1 such messages send on UM RLC.
9				The UE releases signalling radio bearer and dedicated resources. Then the UE goes to idle mode in cell 1.
10				The UE select s cell 6 and camp on it.
11				The SS waits for 15 s after receiving the last RRC CONNECTION RELEASE COMPLETE message.
12	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Content

System Information Block type 3 (Step 5)

Use the same message type found in clause ~~9~~ 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Cell Access Restriction	
- Cell barred	Barred
- Intra-frequency cell re-selection indicator	Not allowed
- T_{barred}	10[s]
- Cell Reserved for operator use	Not reserved
- Cell Reservation Extension	Not reserved
- Access Class Barred List	
- Access Class Barred0	barred
- Access Class Barred1	barred
- Access Class Barred2	barred
- Access Class Barred3	barred
- Access Class Barred4	barred
- Access Class Barred5	barred
- Access Class Barred6	barred
- Access Class Barred7	barred
- Access Class Barred10	barred
- Access Class Barred11	barred
- Access Class Barred12	barred
- Access Class Barred13	barred
- Access Class Barred14	barred
- Access Class Barred15	barred

RRC CONNECTION RELEASE (Step 6)

Use the same message type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
N308	Arbitrarily chosen between 1 and 8

8.1.3.6.5 Test requirement

After step 6 the UE shall start to transmit N308 + 1 times RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH.

After step 11 the UE shall be in Idle mode in cell 6.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.1.14 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.1.14.1 Definition

8.2.1.14.2 Conformance requirement

If the received message is any of the messages:

- RADIO BEARER SETUP; or

  …

the UE shall:

2> if the variable ORDERED_RECONFIGURATION is set to TRUE; or

…

3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

…

3> else:

4> reject the transaction; and

4> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

5> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

…

If the table "Rejected transactions" in the variable TRANSACTIONS is set due to the received message and the variable PROTOCOL_ERROR_REJECT is set to FALSE, the UE shall:

1> not apply the configuration contained in the received reconfiguration message;

1> transmit a failure response message as specified in subclause TS 25.331 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "incompatible simultaneous reconfiguration".

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The UE shall:

1> in case of reception of a RADIO BEARER SETUP message:

…

2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.9, 8.2.2.12, clause 8.6.3.11.

8.2.1.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP, it shall keep its configuration as if the

RADIO BEARER SETUP message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.1.14.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER SETUP message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER SETUP message, the UE shall keep its current configuration as if it had not received the RADIO BEARER SETUP message and shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters upon the specified activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2	←		RADIO BEARER SETUP	
3	→		RADIO BEAER SETUP FAILURE	The UE does not change the configuration because of the RADIO BEARER SETUP message, and transmit this message on its uplink DCCH using the same RLC-AM mode radio bearer before step 1.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.
5	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH Info	
- Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Activation Time	Not present
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH Info	
- Scrambling code number	2

RADIO BEARER SETUP (for Step 2) (TDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination than used in step 1.

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration

8.2.1.14.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall configure the new configuration on the activation time and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.1.18 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.1.18.1 Definition

8.2.1.18.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER SETUP; or

  …

the UE shall:

2> if the variable ORDERED_RECONFIGURATION is set to TRUE; or

2> if the variable CELL_UPDATE_STARTED is set to TRUE; or

2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

4> ignore the transaction; and

4> continue with any ongoing processes and procedures as the message was not received;

4> and end the procedure.

3> else:

Reference

3GPP TS 25.331 clause 8.6.3.11.

8.2.1.18.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE completes the configuration of the radio bearer according to a previous RADIO BEARER SETUP message, it ignores the new RADIO BEARER SETUP message and configures according to the previous RADIO BEARER SETUP message received.

8.2.1.18.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER SETUP message, requesting the UE to setup radio bearers using DPCH physical channels. SS transmits another RADIO BEARER SETUP message before the activation time specified in the first message has lapsed. The UE ignores the new RADIO BEARER SETUP message and configures the radio bearers according to the former RADIO BEARER SETUP message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	Scrambling code number is set to "1" for FDD mode.
2	←		RADIO BEARER SETUP	For FDD mode the IE "Scrambling code number" is set to "2" and for TDD mode a different code combination to that used in step 1 1 is used.
3	→		RADIO BEARER SETUP COMPLETE	The UE ignores the RADIO BEARER SETUP message in step 2 and confirms configuration according to the RADIO BEARER SETUP message in step 1.
4	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 1) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9.

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not present
- Uplink DPCH Info	
- Scrambling code number	1

RADIO BEARER SETUP (Step 1) (TDD)

For this message, use the message sub-type indicated as " Packet to CELL_DCH from CELL_FACH in PS " as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not present
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Scrambling code number	2

RADIO BEARER SETUP (Step 2) (TDD)

For this message , use the message sub-type indicated as " Packet to CELL_DCH from CELL_FACH in PS " as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

8.2.1.18.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC specified in step 1.

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER SETUP message in step 1.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.1.23 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.1.23.1 Definition

8.2.1.23.2 Conformance requirement

If the UE receives:

-a RADIO BEARER SETUP message;

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS25.214 (for FDD only);

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the C_RNTI.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.1.23.3 Test purpose

1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to the RADIO BEARER SETUP message.

2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

8.2.1.23.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: CS-DCCH_FACH (state 6-6) or PS_DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.1.23

Parameter	**Unit**	**Cell 1**		**Cell 6**	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-55	-55	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	Off	-55

Table 8.2.1.23 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including new frequency information to the UE. After the UE receives this message, it configures them and establishes the required radio access bearers and moves into cell 6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. The SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.23.
3	←		RADIO BEARER SETUP	Including new frequency information.
4	→		RADIO BEARER SETUP COMPLETE	The UE sends this message in cell 6.
5	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 3) (FDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech from CELL_FACH to CELL_DCH in CS" or "Speech from CELL_FACH to CELL_DCH in CS" in [9] TS 34.108 clause 9 , with the following exception:

Information Element	Value/remark
Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	350

RADIO BEARER SETUP (Step 3) (TDD)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech from CELL_FACH to CELL_DCH in CS" or "Speech from CELL_FACH to CELL_DCH in CS" in [9] TS 34.108 clause 9 , with the following exception:

Information Element	Value/remark
Frequency info - CHOICE mode - UARFCN (Nt) Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	 TDD Same UARFCN as used for cell 6 As used for cell 6

8.2.1.23.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL_DCH state of cell 6.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.3.17 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.3.17.1 Definition

8.2.3.17.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER RELEASE; or

  …

the UE shall:

2> if the variable ORDERED_RECONFIGURATION is set to TRUE; or

2> if the variable CELL_UPDATE_STARTED is set to TRUE; or

2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

4> ignore the transaction; and

4> continue with any ongoing processes and procedures as the message was not received;

4> and end the procedure.

3> else:

Reference

3GPP TS 25.331 clause 8.6.3.11.

8.2.3.17.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RELEASE message before the UE releases the radio bearer according to a previous RADIO BEARER RELEASE message, it ignores the new RADIO BEARER RELEASE message and configures according to the previous RADIO BEARER RELEASE message received.

8.2.3.17.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE releases the radio access bearer, the UE ignores the second RADIO BEARER RELEASE message and releases the radio bearers according to the previous RADIO BEARER RELEASE message received. Finally, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 2 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	For FDD, the SS sets its UL scrambling code to "1".
2		←	RADIO BEARER RELEASE	For TDD the IE "Secondary scrambling code" is set to "2". For TDD, the code combination assigned is different from that assigned in stage 1.
3		→	RADIO BEARER RELEASE COMPLETE	The UE ignores the RADIO BEARER RELEASE message in step 2 and release radio bearers according to the RADIO BEARER RELEASE message in step 1.
4		←→	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER RELEASE (Step 1) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH Info - Scrambling code number	Not present 1

RADIO BEARER RELEASE (Step 1) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned by SS

RADIO BEARER RELEASE (Step 2) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH Info - Scrambling code number	Not Present 2

RADIO BEARER RELEASE (Step 2) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.3.17.5 Test requirement

After step 2 the UE shall transmit an RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.4.19 Transport Channel Reconfiguration from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.4.19.1 Definition

8.2.4.19.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- TRANSPORT CHANNEL RECONFIGURATION; or

  …

the UE shall:

2> if the variable ORDERED_RECONFIGURATION is set to TRUE; or

2> if the variable CELL_UPDATE_STARTED is set to TRUE; or

2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

4> ignore the transaction; and

4> continue with any ongoing processes and procedures as the message was not received;

4> and end the procedure.

3> else:

Reference

3GPP TS 25.331 clause 8.6.3.11.

8.2.4.19.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message before the UE configures the radio bearer according to the previous TRANSPORT CHANNEL

RECONFIGURATION message it ignores the second TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.19.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous TRANSPORT CHANNEL RECONFIGURATION message elapses, the UE ignores the new TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	For FDD, Scrambling code number is set to "1" and for TDD, the code combination is assigned by SS.
2	←		TRANSPORT CHANNEL RECONFIGURATION	For FDD the IE "Scrambling code number" is set to "2". For TDD the code combination assigned is different that assigned in stage 1.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE ignores the TRANSPORT CHANNEL RECONFIGURATION message in step 2 and configures according to the TRANSPORT CHANNEL RECONFIGURATION message in step 1.
4	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH Info - Scrambling code number	Not present 1

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned in step 1

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH Info - Scrambling code number	Not Present 2

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.4.19.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.4.25 Transport channel reconfiguration from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.4.25.1 Definition

8.2.4.25.2 Conformance requirement

If the UE receives:

-a TRANSPORT CHANNEL RECONFIGURATION message;

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the C_RNTI.

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.4.25.3 Test purpose

1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to TRANSPORT CHANNEL RECONFIGURATION message.
2. To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION message on the uplink DCCH using AM RLC on dedicated physical channel in a different frequency.

8.2.4.25.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.2.4.25

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-55	Off	-55

Table 8.2.4.25 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of ce11 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.4.25. The SS switches its downlink transmission power settings to columns "T1" and transmits a TRANSPORT CHANNEL RECONFIGURATION message, which includes new frequency information leading to a state transition from CELL_FACH to CELL_DCH in cell 6. The UE shall reconfigure transport channel parameter and frequency band according to this message. Finally, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC in cell 6. The SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.4.25.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.4.25.
3	←		TRANSPORT CHANNEL RECONFIGURATION	
4				Reconfiguration of transport channel.
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message in cell 6.
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

TRANSPORT CHANNEL RECONFIGURATION (Step 3)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd) Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6 350

8.2.4.25.5 Test requirement

After step 4 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 5 the UE shall be in CELL_DCH state of cell 6.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.6.18 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.6.18.1 Definition

8.2.6.18.2 Conformance requirement

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- PHYSICAL CHANNEL RECONFIGURATION; or

  …

the UE shall:

2> if the variable ORDERED_RECONFIGURATION is set to TRUE; or

2> if the variable CELL_UPDATE_STARTED is set to TRUE; or

2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or

2> if the received message contains a protocol error according to TS 25.331 clause 9 causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE:

3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:

4> ignore the transaction; and

4> continue with any ongoing processes and procedures as the message was not received;

4> and end the procedure.

3> else:

Reference

3GPP TS 25.331 clause 8.6.3.11.

8.2.6.18.3 Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message before the UE reconfigures the radio bearer according to the previous PHYSICAL CHANNEL RECONFIGURATION message it ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.18.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous PHYSICAL CHANNEL RECONFIGURATION message, the UE ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters CELL_FACH state.
4	←		PHYSICAL CHANNEL RECONFIGURATION	Scrambling code number is set to "1" for FDD mode and A code combination is assigned by SS for TDD
5	←		PHYSICAL CHANNEL RECONFIGURATION	For FDD the IE "Scrambling code number" is set to "2". For TDD, the code combination assigned is different from that assigned in stage 4.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE ignores the PHYSICAL CHANNEL RECONFIGURATION message in step 5 and confirms configuration according to the PHYSICAL CHANNEL RECONFIGURATION message in step 4.
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 4) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH info - Scrambling code number	Not present 1

PHYSICAL CHANNEL RECONFIGURATION (Step 4) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned in step 1

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH info - Scrambling code number	Not Present 2

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.6.18.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.6.33 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.6.33.1 Definition

8.2.6.33.2 Conformance requirement

If the UE receives:

-a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> perform the physical layer synchronisation procedure as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the C_RNTI.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.6.33.3 Test purpose

1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to the PHYSICAL CHANNEL RECONFIGURATION message.

2. To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

8.2.6.33.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.2.6.33

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.6.33 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.33. The SS switches its downlink transmission power settings to columns "T1" and transmits a PHYSICAL CHANNEL RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. The UE shall select cell 6 and change its physical channel configuration after receiving this message and then enter CELL_DCH state. Finally the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. Upon completion of the procedure, the SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.33.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.6.33.
3	←		PHYSICAL CHANNEL RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6
4	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
5	←→			If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 6

8.2.6.33.5 Test requirement

After step 3 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL_DCH state in cell 6.

<< END OF MODIFIED SECTION >>

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1080** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF high priority (WI-010) RRC test cases
Source:	⌘	Motorola and MCC 160
Work item code:	⌘	TEI
Date:	⌘	18-Jan-05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Reference for Default message contents for System Information Blocks is specified as 'clause 9 of 34.108'. It should be 'clause 6.1'
Summary of change:	⌘	Reference to clause 9 of 34.108 replaed with clause 6.1
Consequences if not approved:	⌘	Specification remains incorrect

Clauses affected:	⌘	8.1.2.1, 8.1.7.1d, 8.2.1.10, 8.2.2.10, 8.2.2.31, 8.2.2.35, 8.2.3.9, 8.2.4.4, 8.2.4.10, 8.2.6.9, 8.3.1.1, 8.3.1.18, 8.4.1.5, 8.4.1.7, 8.4.1.8, 8.4.1.18 & 8.4.1.19

Other specs affected:	Y	N		
⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs. No impact on TTCN

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.1.2.1 RRC Connection Establishment in CELL_DCH state: Success

8.1.2.1.1 Definition

8.1.2.1.2 Conformance requirement

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists).

Upon initiation of the procedure, the UE shall:

…

1> set the contents of the RRC CONNECTION REQUEST message according to TS 25.331 subclause 8.1.3.3;

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> perform the mapping of the Access Class to an Access Service Class as specified in TS 25.331 subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;

1> set counter V300 to 1; and

1> start timer T300 when the MAC layer indicates success or failure to transmit the message;

1> select a Secondary CCPCH according to TS 25.304;

1> start receiving all FACH transport channels mapped on the selected Secondary CCPCH.

….

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

1> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

1> set the IE "Initial UE identity" to the value of the variable INITIAL_UE_IDENTITY;

…

The UE shall not include the IE "UE Specific Behaviour Information 1 idle".

….

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are different, the UE shall:

1> ignore the rest of the message.

If the values are identical, the UE shall:

1> stop timer T300, and act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

2> if the UE, according to TS 25.331 subclause 8.6.3.3, will be in the CELL_FACH state at the conclusion of this procedure:

…

1> if the UE, according to TS 25.331 subclause 8.6.3.3, will be in the CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronization procedure A as specified in TS 25.214;

2> enter UTRA RRC connected mode, in a state according to TS 25.331 subclause 8.6.3.3;

1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per TS 25.331 subclause 8.6.3.3, with the contents set as specified below:

2> set the IE "RRC transaction identifier" to:

3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> clear that entry.

…

2> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then

2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;

2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and then

2> include this in IE "UE system specific capability".

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

1> consider the procedure to be successful;

And the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.3.2, 8.1.3.3 and 8.1.3.6

8.1.2.1.3 Test purpose

1. To confirm that the UE leaves the Idle Mode and correctly establishes signalling radio bearers on the DCCH.

2. To confirm that the UE indicates the requested UE radio access capabilities and UE system specific capabilities (may be used by UTRAN e.g. to configure inter RAT- measurements).

3. To confirm that the UE does not include the IE "UE Specific Behaviour Information 1 idle" in the RRC CONNECTION REQUEST message.

8.1.2.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE. SS then transmits an RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that does not match the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST message sent by the UE. UE receives the RRC CONNECTION SETUP message before timer T300 expires but discards it due to a IE "Initial UE Identity" mismatch. UE shall wait for timer T300 to time out before re-transmitting a RRC CONNECTION REQUEST message to the SS. SS again assigns the necessary radio resources and U-RNTI. SS then transmits a RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that matches the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST sent by the UE. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		RRC CONNECTION REQUEST	By outgoing call operation. See specific message contents.
2	←		RRC CONNECTION SETUP	This message is not addressed to the UE. See specific message contents.
3	→		RRC CONNECTION REQUEST	UE shall re-transmit the request message again after a time out of T300 from step 1.
3a				SS checks IE "UE Specific Behaviour Information 1 idle" is not included in received RRC CONNECTION REQUEST message.
4	←		RRC CONNECTION SETUP	See specific message contents.
5				The UE configures the layer 2 and layer 1.
6	→		RRC CONNECTION SETUP COMPLETE	See specific message contents.
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

System Information Block type 11 (FDD)

Use the default system information block with the same type specified in clause ~~9~~ 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE *mode*	
- FDD	
- Reporting quantity	CPICH Ec/N0
- Maximum number of reported cells on RACH	current cell

System Information Block type 11 (TDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE *mode*	TDD
- Reporting quantity list	
- Reporting quantity	P-CCPCH RSCP
- Maximum number of reported cells on RACH	current cell

RRC CONNECTION REQUEST (Step 1) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
UE Specific Behaviour Information 1 idle	Check if this IE is absent.
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE mode	
- FDD	
- CHOICE measurement quantity	
- CPICH Ec/N0	The actual reported value is not checked

RRC CONNECTION REQUEST (Step 1) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE mode	TDD
- CHOICE measurement quantity	
- P-CCPCH RSCP	The actual reported value is not checked

RRC CONNECTION SETUP (Step 2)

Use the same message type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
Initial UE Identity	Set to unmatched identity (incorrect IMSI)

RRC CONNECTION SETUP (Step 4)

Use the default message with the same message type and covering the scenario used in this test (Transition to CELL_DCH) specified in clause 9 of TS 34.108.

RRC CONNECTION SETUP COMPLETE (Step 6)

Use the default message with the same message type specified in clause 9 of TS 34.108 with the following exception.

Information Element	Value/remark
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE radio access capability extension	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE system specific Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

8.1.2.1.5 Test requirement

After step 2 the UE shall re-transmit the RRC CONNECTION REQUEST message again in order to continue the RRC connection establishment procedure.

After step 3 the SS shall check IE "UE Specific Behaviour Information 1 idle" isn't included in received RRC CONNECTION REQUEST message.

After step 6 the UE shall establish an RRC connection and continue the procedure of the outgoing call on the DCCH.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.1.7.1d Security mode control in CELL_DCH state interrupted by a cell update

8.1.7.1d.1 Definition

8.1.7.1d.2 Conformance requirement

If:

- a cell update procedure according to subclause 8.3.1 is initiated; and
- the received SECURITY MODE COMMAND message causes either,
  - the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE; and/or
  - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to be set to TRUE:

the UE shall:

1> abort the ongoing integrity and/or ciphering reconfiguration;

1> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;

1> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;

1> when the response message has been submitted to lower layers for transmission:

2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":

3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":

3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

3> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received; and

2> clear the variable SECURITY_MODIFICATION;

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.12.4b,

8.1.7.1d.3 Test purpose

To confirm that the UE aborts the ongoing integrity and ciphering configuration and the security mode control procedure in case it is interrupted by a cell update procedure.

8.1.7.1d.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

The RRC CONNECTION SETUP message used in the initial setup should be as shown under Specific Message Contents below.

Test Procedure

The UE is in CELL_DCH state. The SS initiates an Authentication and Ciphering procedure, which will result in the generation of a new security keyset (CK/IK).

The SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE..

Then SS immediately turnes of the power in the cell, so the UE will initiate the cell reselection procedure.

The UE shall then abort the Security procedure.

Then after 6 seconds the power in turned on in the cell again.

Next, the SS transmits UE CAPABILITY ENQUIRY message on the downlink DCCH using RLC-AM mode. The UE shall respond to with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM using the same old integrity and ciphierring configutation as used before the SECURITY MODE COMMAND was received...

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state.
2	←		AUTHENTICATION AND CIPHERING REQUEST	GMM message which will result in the generation of a new security keyset
3	→		AUTHENTICATION AND CIPHERING RESPONSE	GMM
4	←		SECURITY MODE COMMAND	See specific message contents.
5	→		SECURITY MODE COMPLETE	SS is configured not to acknowledge this message. After receiving this message the SS turns off power in the cell.
6				The UE starts cell selection
7				After waiting for 6 seconds, the SS turns on power in the cell.
8	→		CELL UPDATE	This message includes the value "Radio link failure" set in IE "Cell update cause". The SS verifies that message is integrity-protected correctly with the old security configuration
9	←		CELL UPDATE CONFIRM	This message includes "Physical channel information elements".
10	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE shall send this message on the uplink DCCH using RLC-AM. SS verifies that message is both integrity-protected and ciphered correctly with the old security configuration
11	←		UE CAPABILITY ENQUIRY	The SS repeats step 11, 12 and 13 until its internal uplink and downlink RLC SN have both surpassed the uplink and downlink ciphering activation time specified for RB2. This message is sent on the downlink DCCH using RLC-AM.
12	→		UE CAPABILITY INFORMATION	The UE shall send this message on the uplink DCCH using RLC-AM. SS verifies that the last UE CAPABILITY INFORMATION message is both integrity-protected and ciphered correctly.
13	←		UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

RRC CONNECTION SETUP (message used in the initial setup)

Use the same message type and contents as found in clause 9 of TS 34.108 with the following exception:

Signalling RB information to setup	(AM DCCH for RRC)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	32
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	OMIT
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

SECURITY MODE COMMAND (Step 4)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Integrity check info	
Message authentication code	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
RRC Message sequence number	Next RRC SN
Security Capability	Same as originally sent by UE (and stored in SS)
Ciphering mode info	
Ciphering mode command	Start/restart
Ciphering algorithm	UEA1
Activation time for DPCH	Not Present
Radio bearer downlink ciphering activation time info	
RB Identity	1
RLC sequence number	Current RLC SN
RB Identity	2
RLC sequence number	Current RLC SN + 2
RB Identity	3
RLC sequence number	Current RLC SN
RB Identity	4
RLC sequence number	Current RLC SN
RB Identity	20
RLC sequence number	Current RLC SN
Integrity protection mode info	
Integrity protection mode command	Modify
Downlink integrity protection activation info	
	Current RRC SN for SRB0
	Current RRC SN for SRB1
	Current RRC SN for SRB2
	Current RRC SN for SRB3
	Current RRC SN for SRB4
Integrity protection algorithm	UIA1
CN domain identity	PS Domain

NOTE: "Current RLC SN" is defined as the value of VT(S) in the SS at the time when the SECURITY MODE COMMAND is submitted to RLC for transmission, that is, the RLC send sequence number of the next transmitted RLC PDU on the particular radio bearer. "Current RRC SN" is defined as the RRC message sequence number of the next transmitted RRC message on the particular radio bearer.

CELL UPDATE (Step 8)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in clause 9 of TS 34.108 Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001'
Cell Update Cause	"Radio link failure"

CELL UPDATE CONFIRM (Step 9) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 8
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
-UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information common for all radio links	Same as RRC CONNECTION SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 9) (TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in clause 9 of TS 34.108 Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 8
RRC State indicator	CELL_DCH
UplinkDPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

8.1.7.1d.5 Test requirement

After uplink ciphering activation time has lapsed, SS verifies that the UE CAPABILITY INFORMATION message received at step 12 is integrity protected with UIA algorithm and ciphered with the old ciphering configuration and algorithm and not the one indicated in the SECURITY MODE COMMAND (Step 4) message.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.1.10 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Success

8.2.1.10.1 Definition

8.2.1.10.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.1.10.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state, after SS prompts the test operator to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE . After the UE receives this message, it configures them and establishes the required radio bearers. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9.

8.2.1.10.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.2.10 Radio Bearer Reconfiguration: from CELL_FACH to CELL_DCH including modification of previously signalled CELL_DCH configuration: Success

8.2.2.10.1 Definition

8.2.2.10.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (for FDD only);

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.2.10.3 Test purpose

To confirm that the UE applies a previously signalled configuration for CELL_DCH and in addition modifies the parameters for which reconfiguration is requested in the RADIO BEARER RECONFIGURATION message that is used to initiate transition from CELL_FACH to CELL_DCH.8.2.2.10.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The UE reconfigures the radio bearers and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	This message includes IE "Uplink DPCH Info"
2				Reconfiguration of radio bearer
3	→		RADIO BEARER RECONFIGURATION COMPLETE	
4	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present

- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present

- RB mapping info	Not Present
- RB stop/continue	Not Present
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
DL Transport channel information common for all transport channels	Not Present
Added or Reconfigured DL TrCH information	Not Present

8.2.2.10.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.2.31 Radio Bearer Reconfiguration for transition from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.2.31.1 Definition

8.2.2.31.2 Conformance requirement

If the UE receives:

…

-a RADIO BEARER RECONFIGURATION message; or

…

it shall:

…

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

…

1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> in FDD; or

1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:

2> remove any C-RNTI from MAC;

2> clear the variable C_RNTI.

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

…

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.2.31.3 Test purpose

1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to the RADIO BEARER RECONFIGURATION message.

2. To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

8.2.2.31.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.2.2.31

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-60	Off	-60
P-CCPCH RSCP (TDD)	dBm	-60	-60	Off	-60

Table 8.2.2.31 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.31. For FDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6. For TDD mode, the SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CCPCH info" set to cell 6 parameters. The UE shall select cell 6 and then enter CELL_DCH state according to receiving RADIO BEARER RECONFIGURATION message. Finally the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. Upon completion of the procedure, the SS calls for generic procedure C.3 to check that UE is in CELL_DCH state in cell 6.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.31.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.31.
3	←		RADIO BEARER RECONFIGURATION	Including IE "Frequency info" set to frequency information of cell 6 and IE "Primary CPICH info" set to Primary Scrambling Code assigned to P-CPICH of cell 6 for FDD mode or IE "Primary CCPCH info" set to cell 6 parameters.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
5	←→		Call C.3	If the test result of C.3 indicates that UE is in CELL_DCH state in cell 6, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER RECONFIGURATION (Step 3 for FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info	
CHOICE mode	FDD
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 3 for TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info	
CHOICE mode	TDD
- UARFCN (Nt)	Same UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	As used for cell 6

8.2.2.31.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL_DCH state in cell 6.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.2.35 Radio Bearer Reconfiguration from CELL_DCH to CELL_FACH: Successful channel switching with multiple PS RABs established

8.2.2.35.1 Definition

8.2.2.35.2 Conformance requirement

If the IE "RB information to release" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

1> if the IE "RB identity" is set to a value less than 4:

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if the IE "RB identity" refers to a signalling radio bearer:

2> release the RLC entity for the signalling radio bearer;

2> delete the information about the signalling radio bearer from the variable ESTABLISHED_RABS.

1> if the IE "RB identity" refers to a radio bearer:

2> release the PDCP and RLC entities for that radio bearer;

2> indicate release of the RAB subflow associated with the radio bearer to upper layers;

2> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

2> when all radio bearers belonging to the same radio access bearer have been released:

3> indicate release of the radio access bearer to upper layers providing the "CN domain identity" together with the "RAB identity" stored in the variable ESTABLISHED_RABS;

3> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

…

If the IE "RB mapping info" is included, the UE shall:

1> for each multiplexing option of the RB:

2> if a transport channel that would not exist as a result of the message (i.e. removed in the same message in IE "Deleted DL TrCH information" and IE "Deleted UL TrCH information") is referred to:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, CPCH, FACH or DSCH is included:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):

3> set the variable INVALID_CONFIGURATION to TRUE.

2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:

3> set the variable INVALID_CONFIGURATION to TRUE.

2> for each logical channel in that multiplexing option:

3> if the value of the IE "RLC size list" is set to "Explicit list":

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or

4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE

"Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":

5> set the variable INVALID_CONFIGURATION to TRUE.

3> if the value of the IE "RLC size list" is set to "All":

4> if the transport channel this logical channel is mapped on is RACH; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":

5> set the variable INVALID_CONFIGURATION to TRUE.

3> if the value of the IE "RLC size list" is set to "Configured":

4> if the transport channel this logical channel is mapped on is RACH; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or

4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:

5> set the variable INVALID_CONFIGURATION to TRUE.

1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:

2> set the variable INVALID_CONFIGURATION to TRUE.

1> delete all previously stored multiplexing options for that radio bearer;

1> store each new multiplexing option for that radio bearer;

1> if the IE "Uplink transport channel type" is set to the value "RACH":

2> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in System Information Block type 5 or System Information Block type 6.

1> determine the sets of RLC sizes that apply to the logical channels used by that RB, based on the IEs "RLC size list" and/or the IEs "Logical Channel List" included in the applicable "Transport format set" (either the ones received in the same message or the ones stored if none were received); and

1> in case the selected multiplexing option is a multiplexing option on RACH:

2> ignore the RLC size indexes that do not correspond to any RLC size within the Transport Format Set stored for RACH.

1> if RACH is the transport channel to be used on the uplink, if that RB has a multiplexing option on RACH and if it is using AM:

2> apply the largest size amongst the ones derived according to the previous bullet for the RLC size (or RLC sizes in case the RB is realised using two logical channels) for the corresponding RLC entity.

NOTE: The IE "RB mapping info" is only included in IE "Predefined RB configurations" in system information when used for Inter-RAT handover to UTRAN and there is no AM RLC size change involved in this case.

1> if that RB is using AM and the RLC size applicable to the logical channel transporting data PDUs is different from the one derived from the previously stored configuration:

2> re-establish the corresponding RLC entity;

2> configure the corresponding RLC entity with the new RLC size;

2> for each AM RLC radio bearer in the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS whose RLC size is changed; and

2> for each AM RLC signalling radio bearer in the CN domain as indicated in the IE "CN domain identity" in the variable LATEST_CONFIGURED_CN_DOMAIN whose RLC size is changed:

3> if the IE "Status" in the variable CIPHERING_STATUS of this CN domain is set to "Started":

4> if this IE was included in CELL UPDATE CONFIRM:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.

4> if this IE was included in a reconfiguration message:

5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.

1> if that RB is using UM:

2> indicate the largest applicable RLC size to the corresponding RLC entity.

1> configure MAC multiplexing according to the selected multiplexing option (MAC multiplexing shall only be configured for a logical channel if the transport channel it is mapped on according to the selected multiplexing option is the same as the transport channel another logical channel is mapped on according to the multiplexing option selected for it);

1> configure the MAC with the logical channel priorities according to selected multiplexing option;

1> configure the MAC with the set of applicable RLC Sizes for each of the logical channels used for that RB;

1> if there is no multiplexing option applicable for the transport channels to be used in the RRC state indicated in the IE "RRC State Indicator" included in the received message:

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if there is more than one multiplexing option applicable for the transport channels to be used in the RRC state indicated in the IE "RRC State Indicator" included in the received message:

2> set the variable INVALID_CONFIGURATION to TRUE.

In case IE "RLC info" includes IE "Downlink RLC mode " ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

Channel used in UL	DL channel type implied by "same as"
DCH	DCH
RACH	FACH
CPCH	FACH
USCH	DSCH

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel. In such case the UE behaviour is not specified.

Reference

3GPP TS 25.331 clause 8.6.4.6, 8.6.4.8.

8.2.2.35.3 Test purpose

To confirm that the UE transit from CELL_DCH to CELL_FACH state according to a RADIO BEARER RECONFIGURATION message when having two radio access bearers established.

To confirm that the UE transit from CELL_FACH to CELL_DCH state according to a RADIO BEARER RECONFIGURATION message when having two radio access bearers established.

To confirm that the UE release two radio access bearers included in a single RADIO BEARER RELEASE message.

8.2.2.35.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH + DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

Support of PS service Yes/No

Secondary PDP context activation procedure Yes/No

Test Procedure

The UE is in CELL_DCH state of cell 1. The UE initiates the activation of a second PDP context, upon which the SS establishes a PS domain RAB and confirms the PDP context activation.

Next, the SS transmits a RADIO BEARER RECONFIGURATION message to move the UE to CELL_FACH state. The UE shall apply the new configuration and return the RADIO BEARER RECONFIGURATION COMPLETE message.

The SS will then transmit a RADIO BEARER RECONFIGURATION message to move the UE to CELL_DCH state. The UE shall apply the new configuration and return the RADIO BEARER RECONFIGURATION COMPLETE message.

A DEACTIVATE PDP CONTEXT REQUEST message is then sent by the SS to request the UE to deactivate both PDP contexts. The UE shall reply with a DEACTIVATE PDP CONTEXT ACCEPT message. After this procedure, the SS transmits a RADIO BEARER RELEASE. The UE shall release both radio bearers and transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_DCH state of cell 1.
2	→		UPLINK DIRECT TRANSFER (ACTIVATE SECONDARY PDP CONTEXT REQUEST)	SM
3	←		RADIO BEARER SETUP	Establishment of second PS domain RAB
4	→		RADIO BEARER SETUP COMPLETE	
5	←		DOWNLINK DIRECT TRANSFER (ACTIVATE SECONDARY PDP CONTEXT ACCEPT)	SM
6	←		RADIO BEARER RECONFIGURATION	To move the UE to CELL_FACH. RB reconfiguration procedure is used to: • Modify RLC timer values The message includes a C-RNTI and the Primary Scrambling code of cell 1.
7	→		RADIO BEARER RECONFIGURATION COMPLETE	
8	←		RADIO BEARER RECONFIGURATION	To move the UE to CELL_DCH. RB reconfiguration procedure is used to: • Re- specify the DCH configuration (don't re- use stored multiplexing option) • Modify RLC timer values
9	→		RADIO BEARER RECONFIGURATION COMPLETE	
10	←		DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation both PDP contexts
11	→		DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation
12	←		RADIO BEARER RELEASE	Release of two PS domain RABs
13	→		RADIO BEARER RELEASE COMPLETE	

For Steps 2, 3, 4, 5 see also Test Case 12.9.13 "Service Request / RAB re-establishment / UE initiated / multiple PDP contexts" for additional details.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception :

Information Element	Value/remark
RAB information for setup - RAB identity	 0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
RB information to setup - RB identity	 22

RADIO BEARER RECONFIGURATION (Step 6) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_FACH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	700
- Max_RST	6
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	FALSE
- Timer_STATUS_periodic	Not Present
- RB information to reconfigure	
- RB identity	22
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	700
- Max_RST	6
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	FALSE
- Timer_STATUS_periodic	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

RADIO BEARER RECONFIGURATION (Step 6) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_FACH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	700
- Max_RST	6
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	FALSE
- Timer_STATUS_periodic	Not Present
- RB information to reconfigure	
- RB identity	22
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	700
- Max_RST	6
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	Not Present
- Timer_EPC	Not Present
- Missing PDU indicator	FALSE
- Timer_STATUS_periodic	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CCPCH info	Set to same as used for cell 1

RADIO BEARER RECONFIGURATION (Step 8) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	7
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB information to reconfigure	
- RB identity	22
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99

- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	8
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	8
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

RADIO BEARER RECONFIGURATION (Step 8) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	
- RB identity	20
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	7
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB information to reconfigure	
- RB identity	22
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99

- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	8
- CHOICE RLC size list	Configured
- MAC logical channel priority	6
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	8
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CCPCH info	Set to same as used for cell 1

RADIO BEARER RELEASE (Step 12)

The contents of RADIO BEARER RELEASE message in this test case are identical the message sub-type indicated by "Packet to CELL_DCH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RB information to release	
- RB identity	20
RB information to release	
- RB identity	22

8.2.2.35.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 7 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 12 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.3.9 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Success

8.2.3.9.1 Definition

8.2.3.9.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RELEASE message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214;

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.3.9.3 Test purpose

To confirm that an UE, in state CELL_FACH, releases the radio access bearers using common physical channel. After the release, it shall access the affected radio bearers on the DPCH.

8.2.3.9.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message to the UE. In this message, SS commands the UE to release radio access bearers on common physical channel. At the same time, SS allocates DPCH to support the affected radio bearers. The UE shall release the indicated radio access bearers and transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	
2				UE shall release the radio access bearers carried by common physical channel.
3	→		RADIO BEARER RELEASE COMPLETE	
4	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9.

8.2.3.9.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message using the dedicated physical channel allocated.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.4.4 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Failure (Physical channel failure and cell reselection)

8.2.4.4.1 Definition

8.2.4.4.2 Conformance requirement

If the received message caused the UE to be in CELL_DCH state and the UE failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> revert to the configuration prior to the reception of the message (old configuration);

1> if the old configuration includes dedicated physical channels (CELL_DCH state) and the UE is unable to revert to the old configuration:

2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "radio link failure";

2> after the cell update procedure has completed successfully:

3> proceed as below.

…

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to "physical channel failure".

1> set the variable ORDERED_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

The UE shall:

1> in case of reception of a TRANSPORT CHANNEL RECONFIGURATION message:

…

2> transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.3.1.7.

8.2.4.4.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes a cell update procedure when the UE cannot synchronise with the SS on the new channel before T312 expires and fails to revert to the old configuration.

8.2.4.4.4 Method of test

Initial Condition

System Simulator: 2 cells. – Cell 1 is active and cell 2 is inactive.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.4.4

Parameter	**Unit**	**Cell 1**		**Cell 2**	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-60	OFF	-75
P-CCPCH RSCP (TDD)	dBm	-60	-60	OFF	-75

Table 8.2.4.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_DCH state in cell 1. Then the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.4. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE. The message specifies a new configuration in cell 2 but the SS does not reconfigure the new channel in cell 2 specified in this message and release the old configuration in cell 1. The UE cannot synchronise with SS before T312 expires and shall attempt to revert to the old configuration in cell 1. The UE cannot revert to the old configuration and then transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure" in cell 1. The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure".

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	
2				The SS does not reconfigure L1 in accordance with TRANSPORT CHANNEL RECONFIGURTION message and release the old configuration.
3	→		CELL UPDATE	This message includes the value "radio link failure" set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	This message includes IE "Physical channel information elements".
5				The SS changes physical channel configuration according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
Downlink information common for all radio links	Set to the same values as for "Packet to CELL_DCH from CELL_DCH in PS"
Downlink information for each radio link list	Set to the same values as for "Packet to CELL_DCH from CELL_DCH in PS" unless explicitly indicated otherwise in the following
- Downlink information for each radio links	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary CPICH scrambling code	Ref. to the Default setting for cell 2 in TS34.108 clause 6.1 (FDD)

CELL UPDATE (Step 3)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0000 0001' "radio link failure"

CELL UPDATE CONFIRM (Step 4) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UplinkDPCH Info	Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"
Downlink information common for all radio links	Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"
Downlink information for each radio link list	Set to the same values as RADIO BEARER SETUP message for "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech to CELL_DCH from CELL_FACH in CS" or "Speech to CELL_DCH from CELL_FACH in CS"

CELL UPDATE CONFIRM (Step 4) (TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information common for all radio links	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio link list	Same as RADIO BEARER SETUP message used to move to initial condition

TRANSPORT CHANNEL RECONGURATION FAILURE (Step 7)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.4.4.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "radio link failure" in cell 1.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.4.10 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Success

8.2.4.10.1 Definition

8.2.4.10.2 Conformance requirement

If the UE receives:

- a TRANSPORT CHANNEL RECONFIGURATION message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214;

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.4.10.3 Test purpose

To confirm that the UE reconfigures a new channel using dedicated physical channel according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.10.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state. The UE has previously stored radio bearer and transport channel parameters for use in CELL_DCH. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message, which modifies the rate as compared to the stored configuration to the UE. The message also includes the physical layer parameters e.g. IE "Uplink DPCH info" and IE "Downlink DPCH info" leading to a state transition from CELL_FACH to CELL_DCH in the same cell, to the UE. The UE shall reconfigure the new channel according to this message. Finally, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	Includes both IE "Uplink DPCH Info" and IE "Downlink DPCH Info" in the message.
2				Reconfiguration of transport channel
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
4	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Added or Reconfigured UL TrCH information	Set to the same values as for "Packet to CELL_DCH from CELL_DCH in PS". Only the DCH for DTCH is included, since only for that TrCH the rate is changed as compared to the stored CELL_DCH configuration
Added or Reconfigured DL TrCH information	Set to the same values as for "Packet to CELL_DCH from CELL_DCH in PS". Only the DCH for DTCH is included, since only for that TrCH the rate is changed as compared to the stored CELL_DCH configuration
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
Downlink information for each radio link list	
- Downlink information for each radio links	
- CHOICE mode	FDD
- Downlink DPCH info for each RL	
- DL channelisation code	
- Scrambling code change	Not Present

TRANSPORT CHANNEL RECONFIGURATION COMPLETE

Use the message with the same message type specified in Annex A.

8.2.4.10.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT RECONFIGURATION COMPLETE message on the newly configured DPCH.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.6.9 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Success

8.2.6.9.1 Definition

8.2.6.9.2 Conformance requirement

If the UE receives:

- a PHYSICAL CHANNEL RECONFIGURATION message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214;

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4.

8.2.6.9.3 Test purpose

To confirm that the UE reconfigures a new physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, which invoke UE to transit from CELL_FACH to CELL_DCH.

8.2.6.9.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_FACH to CELL_DCH. The UE shall reconfigure the new dedicated physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		PHYSICAL CHANNEL RECONFIGURATION	
5				The UE shall configure the allocated dedicated physical channels.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A for FDD and Annex A for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

8.2.6.9.5 Test requirement

After step 2 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION message on the new dedicated physical channel.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.3.1.1 Cell Update: cell reselection in CELL_FACH

8.3.1.1.1 Definition

8.3.1.1.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

…

1> Re-entering service area:

…

1> RLC unrecoverable error:

…

1> Cell reselection:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

3> if the UE is in CELL_FACH or CELL_PCH state and the UE performs cell re-selection; or

3> if the UE is in CELL_FACH state and the variable C_RNTI is empty:

4> perform cell update using the cause "cell reselection".

…

When initiating cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

…

…

1> move to CELL_FACH state, if not already in that state;

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

…

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

1> set the IE "Cell update cause" corresponding to the cause specified in TS 25.331 subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;

NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

1> set the IE "U-RNTI" to the value of the variable U_RNTI;

1> if the value of the variable PROTOCOL_ERROR_INDICATOR is TRUE:

…

1> if the value of the variable FAILURE_INDICATOR is TRUE:

…

…

When the UE receives a CELL UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE shall:

1> stop timer T302;

1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

2> includes "RB information elements"; and/or

2> includes "Transport channel information elements"; and/or

2> includes "Physical channel information elements"; and

2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

3> set the variable ORDERED_RECONFIGURATION to TRUE.

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified otherwise in the following:

…

…

1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

…

If the UE after state transition remains in CELL_FACH state, it shall

1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select PRACH according to TS 25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> not prohibit periodical status transmission in RLC;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> ignore that IE and stop using DRX.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

…

the UE shall:

…

1> in case of a cell update procedure:

2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry.

…

1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

…

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and

- includes the IE "RB information to reconfigure list"; or

- includes the IE "RB information to be affected list":

the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- includes "Transport channel information elements":

the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and

- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

the UE shall:

1> transmit no response message.

If the new state is CELL_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

…

1> if the variable PDCP_SN_INFO is empty:

…

2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":

3> when RLC has been requested to transmit the response message,

4> continue with the remainder of the procedure.

…

If any or several of the following conditions are true:

…;

- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

the UE shall:

1> stop T302 if it is running;

…

1> check whether it is still in "in service area";

…

1> in case of a cell update procedure:

2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

1> if V302 is equal to or smaller than N302, the UE shall:

2> if the UE performed cell re-selection:

3> delete its C-RNTI.

2> in case of a cell update procedure:

3> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

3> submit the CELL UPDATE message for transmission on the uplink CCCH.

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302, the UE shall:

…

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1.3 Test purpose

1. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell.
2. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-69	-69	-60
P-CCPCH RSCP (TDD)	dBm	-60	-69	-69	-60

Table 8.3.1.1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions. SS switches the power settings repeatedly between columns "T1" and "T0", whenever the description below specifies that the transmission power settings for cell 1 and cell 2 be reversed.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_FACH", to the UE on the downlink DCCH. UE shall verify that IE "New C-RNTI" is not included in the downlink message and shall send a CELL UPDATE message to SS again. SS shall then send a CELL UPDATE CONFIRM message which includes a valid IE "New C-RNTI". SS verifies that the UE send UTRAN MOBILITY INFORMATION CONFIRM message.. UE shall stay in CELL_FACH state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with CELL UPDATE CONFIRM message and allocates new C-RNTI and U-RNTI identities to the UE. The IE "RRC State Indicator" is set to "CELL_FACH" in this message. The UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall initiate a cell update procedure by transmitting a CELL UPDATE message and stating the cause as 'cell re-selection'. SS replies with a CELL UPDATE CONFIRM message which contains IE "Physical channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send PHSICAL CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "Transport channel information elements" and IE "RRC State Indicator" is set to "CELL_DCH". The UE shall move to CELL_DCH state and send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. The SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message, asking the UE to move to CELL_FACH state. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after transiting to CELL_FACH state. Following this, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to be affected list". The UE shall send RADIO BEARER RECONFIGURATION COMPLETE message. Then, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to release list". The UE shall send RADIO BEARER RELEASE COMPLETE message. Finally, SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS shall not respond to this message but SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.1. UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS shall then send CELL UPDATE CONFIRM message to UE. UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.1. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
4a	→		CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4b	←		CELL UPDATE CONFIRM	See message content.
5	→		UTRAN MOBILITY INFORMATION CONFIRM	
6				SS reverses the transmission power level of cell 1 and cell 2.
7	→		CELL UPDATE	
8	←		CELL UPDATE CONFIRM	New C-RNTI and U-RNTI identities are assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH".
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10				SS reverses the transmission power level of cell 1 and cell 2.
11	→		CELL UPDATE	
12	→		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_DCH". IE "Physical channel information elements" is included in this message
12a	←		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
13	→		PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
15				The SS reverses the transmission power level of cell 1 and cell 2.

16	→	CELL UPDATE	
17	←	CELL UPDATE CONFIRM	IE "Physical channel information elements" is included in this message, and IE "RRC State Indicator" is set to "CELL_DCH". IE "Transport channel information elements" is included in this message
18	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
19	←	PHYSICAL CHANNEL RECONFIGURATION	The UE is in CELL_DCH now. The SS shall send PHYSICAL CHANNEL RECONFIGURATION message to the UE asking the UE to transit to CELL_FACH state.
20	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
21			The SS reverses the transmission power level of cell 1 and cell 2.
22	→	CELL UPDATE	
23	←	CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to reconfigure list" and IE "RB information to be affected list" is included in this message.
24	→	RADIO BEARER RECONFIGURATION COMPLETE	
25			The SS reverses the transmission power level of cell 1 and cell 2.
26	→	CELL UPDATE	
27	←	CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE. IE "RRC State Indicator" is set to "CELL_FACH". IE "RB information to release list" is included in this message
28	→	RADIO BEARER RELEASE COMPLETE	
29			SS reverses the transmission power level of cell 1 and cell 2.
30	→	CELL UPDATE	
31			SS reverses the transmission power level of cell 1 and cell 2.
32	→	CELL UPDATE	
33	←	CELL UPDATE CONFIRM	New C-RNTI identity is assigned to the UE.
34	→	UTRAN MOBILITY INFORMATION CONFIRM	
35	←→	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 3, 4a, 7,, 11, 16, 22, 30 and 32)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' In step 3, 4a and 7 check to see if set to '0000 0000 0000 0000 0001'. In step 11, 16, 22, 26, 30 and 32, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous assignment Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in TS 34.108, clause 9.

CELL UPDATE CONFIRM (Step 4b)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 0001' An arbitrary 20-bits string which is different from original S-RNTI '0000 0000 0000 1111'

CELL UPDATE CONFIRM (Step 12)

Use the same message sub-type found in step 8 and k=0, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
CHOICE *channel requirement* Uplink DPCH info	 Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information common for all radio links	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information per radio link list	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 12a)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS":

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured uplink TrCH information	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
DL Transport channel information for all transport channels	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Added or Reconfigured downlink TrCH information	Same as RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
CHOICE *channel requirement*	
Uplink DPCH info	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information common for all radio links	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)
Downlink information per radio link list	Same as the IE in RADIO BEARER SETUP (Packet to CELL_DCH from CELL_FACH in PS)

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 14)

Use the same message sub-type found in [9] TS 34.108 clause 9.

PHYSICAL CHANNEL RECONFIGURATION (Step 19)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_DCH in PS", with following exception.

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 20)

Use the same message sub-type found in [9] TS 34.108 clause 9.

CELL UPDATE CONFIRM (Step 23)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
RB information to be reconfigure	
New C-RNTI - RB identity - PDCP info - PDCP SN info - RLC info - RB Information Release List - RB Information Reconfiguration List	'1010 1010 1010 1010' 20 Not Present Not Present Not Present Not Present Present
- RB Information Affected List	Present

CELL UPDATE CONFIRM (Step 27)

Use the same message sub-type found in TS 34.108, clause 9 with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'
RB information to release -RB identity	 4

CELL UPDATE CONFIRM (Step 33)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

8.3.1.1.5 Test requirement

At step 3 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

At step 4a the UE shall transmit CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

At step 4b, the SS shall send a CELL UPDATE CONFIRM.

At step 5, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 7 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 9, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

At step 11 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 12, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_DCH state. In addition, it also specifies the IE “Physical Channel Information elements”.

At step 12a, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new physical channel assigned.

At step 13 and 14, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 15, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 16 the UE shall sent a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 17, the SS shall send a CELL UPDATE CONFIRM and take the UE into CELL_DCH state. In addition, it also specifies the IE “Physical Channel Information elements” and “Transport Channel Information elements”.

At step 18, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE.

At step 19 and 20, the SS uses PHYSICAL CHANNEL RECONFIGURATION to take the UE into CELL_FACH state.

At step 21, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 22, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 23, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies “RB Information Reconfigure List and RB Information Affected List Information”.

At step 24, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE.

At step 25, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 26, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 27, the SS shall send a CELL UPDATE CONFIRM taking the UE into CELL_FACH state. In addition, it also specifies the IE “RB Information to release list”.

At step 28, the UE shall transmit a RADIO BEARER RELEASE COMPLETE.

At step 29, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 30, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 31, the SS reverses the transmission power level of cell 1 and 2 causing the UE to reselect to a different cell.

At step 32, the UE shall send a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

At step 33, the SS shall send a CELL UPDATE CONFIRM

At step 34, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.3.1.18 Cell Update: Radio Link Failure (T314>0, T315=0), CS RAB established

8.3.1.18.1 Definition

8.3.1.18.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

2> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

…

2> if the stored value of the timer T314 is equal to zero:

…

2> if the stored value of the timer T315 is equal to zero:

3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";

3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

…

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;

1> set the variable CELL_UPDATE_STARTED to TRUE;

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to TS 25.331 subclause 8.5.17;

2> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

2> use the transport format set given in system information as specified in TS 25.331 subclause 8.6.5.1.

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state:

1> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 in TS 25.331are not fulfilled; or

…

the UE shall:

…

1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> if V302 is equal to or smaller than N302:

2> select a suitable UTRA cell according to TS 25.304;

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.7a

8.3.1.18.3 Test purpose

1. To confirm that the UE shall try to find a new cell after detecting that a radio link failure has occurred.

2. To confirm that the UE performs a cell selection procedure when it fails to configure the physical channel(s) indicated in the CELL UPDATE CONFIRM message.

8.3.1.18.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and cell 2 are active).

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: CS_DCCH+DTCH_DCH (state 6-9).

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled “System Information Block type 1 (supported PLMN type is GSM-MAP)” as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T315	0

Test Procedure

Table 8.3.1.18

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.

The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.18. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 2. After that, it shall transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated transport and physical channel parameters on downlink DCCH. SS shall not configure according to this message. Instead, SS configures its downlink transmission power settings according to column "T0" in table 8.3.1.18. UE shall fail to establish the dedicated channel in cell 2.

UE shall re-select to cell 1 and transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure". Then SS responds with a CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0			Void	
1			Void	
2			Void	
3			Void	
4				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.18. SS starts to listen to the uplink CCCH of cell 2.
5			Void	
6				The UE detects the radio link failure.
7	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
8	←		CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
9				SS does not configure according to the message in step 8. SS configures cell 1 and 2 according to column "T0" in table 8.3.1.18.
10	→		CELL UPDATE	UE shall select cell 1 and transmit this message
11	←		CELL UPDATE CONFIRM	See message content.
12	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 7)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
- S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

CELL UPDATE CONFIRM (Step 8 and 11)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.

CELL UPDATE (Step 10)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
- S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
Failure cause	This IE is not Checked.

8.3.1.18.5 Test requirement

After step 6, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 9, the UE shall transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure".

After step 11, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL_DCH to CELL_FACH state (FDD)

8.4.1.5.1 Definition

8.4.1.5.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH state, the UE shall:

1> stop intra-frequency type measurement reporting;

1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or

1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

1> if the transition is not due to a reconfiguration message:

2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT_IDENTITY.

1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331).

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH:

2> resume the measurement reporting.

1> if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);

2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331):

3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

Reference

3GPP TS 25.331, clause 8.4.1.6.1, 8.4.1.7.1

8.4.1.5.3 Test Purpose

1. To confirm that the UE stops performing intra-frequency measurement reporting specified in a MEASUREMENT CONTROL message, when it moves from CELL_DCH state to CELL_FACH state.

2. To confirm that the UE reads the System Information Block type 11 or 12 messages when it enters CELL_FACH state from CELL_DCH state, and starts to monitor the cells listed in the IE "intra-frequency cell info list".

3 To confirm that the UE performs measurements on uplink RACH transmissions and appends the measured results in RACH messages, when it receives IE "intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" in the System Information Block type 11 or 12 messages.

4. To confirm that the UE applies the reporting criteria in IE "intra-frequency reporting criteria" in System Information Block Type 11 or 12 messages following a state transition from CELL_FACH to CELL_DCH, if no intra-frequency measurements applicable to CELL_DCH are stored.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 and cell 2 are active, while cell 3 is switched off..

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 11 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

Test Procedure

Table 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-72	-85	-122	-70

The UE is initially in CELL_DCH state. The System Information Block type 11 message is modified compared to the default message contents, in order to prevent the reporting of "Cell synchronisation information". No measurement to be applied by the UE in CELL_DCH state is specified in any of the System Information Block type 11 or 12 messages.

SS sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement for the measurement of cell 2's CPICH RSCP. At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds. The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.
SS transmits PHYSICAL CHANNEL RECONFIGURATION message to move the UE to CELL_FACH. After receiving this message, the UE shall reconfigure itself and reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. SS starts T305 timer and SS monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. SS transmits System Information Block type 12 messages in cell 1, which include cell 3 into the IE "intra-frequency cell info list" and modifies SIB11 to indicate that SIB12 is now being broadcast. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in the System Information Type 12 messages. Event type 1a reporting criterion is specified for intra-frequency measurements. SS transmit SYSTEM INFORMATION CHANGE INDICATION message to UE. SS waits until T305 has expired. The UE shall respond with a CELL UPDATE message, which comprises IE "Measured results on RACH" to report the readings of CPICH RSCP for cell 1 and cell 3. SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change the physical resources nor allocate any new RNTI identities. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, and configures dedicated physical channel for both uplink and downlink directions. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages.

SS shall receive the MEASUREMENT REPORT messages at 500 milliseconds interval.

SS verifies that it includes CPICH RSCP values of the cells 1and 3 in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results".

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in PS-DCCH+DTCH_DCH (state 6-10) in cell 1.
2			Void	
3			Void	
4			Void	
5	←		MEASUREMENT CONTROL	SS requests for measurement of cell 2´s CPICH RSCP value and reporting of CPICH RSCP values of active cells and monitored set cells.
6	→		MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval.
7	←		PHYSICAL CHANNEL RECONFIGURATION	SS moves the UE to CELL_FACH state.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state. SS starts T305 timer.
9	←		Master Information Block System Information Block type 11, 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. SIB 11 is modified to indicate that SIB12 is now broadcast and to add cell 2 as a neighbour cell. SIB 12 indicates that cell 3 is included in the IE "intra-frequency cell info list". SS waits for 1 minute and verifies that no MEASUREMENT REPORT messages are detected on the uplink.
10	←		SYSTEM INFORMATION CHANGE INDICATION	SS waits until T305 has expired.
11	→		CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 present in this message.
12	←		CELL UPDATE CONFIRM	No changes in physical resource allocation and RNTI identities.
13	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15	→		MEASUREMENT REPORT	Repeated at 500 milliseconds interval

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 5)

Information Element	Value/remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured result list	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)"

MASTER INFORMATION BLOCK (Step 9)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/Remarks
MIB Value Tag	2

System Information Block type 11 (Step 9)

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

System Information Block type 12 (Step 9)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	6
- Intra-frequency cell cells	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0dB
- Maximum allowed UL TX power	0dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin, Qrxlevmin	-20dB, -115dBm
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell + best neighbour
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC

- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting range constant	14.5dB
- Cells forbidden to affect reporting	Not present
- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	7
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting Interval	500 milliseconds
- Reporting cell status	
- CHOICE *reported cell*	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not present

SYSTEM INFORMATION CHANGE INDICATION (Step 10)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	2

CELL UPDATE (Step 11)

Information Element	Value/remark
U-RNTI	Check to see if set to the same value assigned during the execution of procedure P3 or P5.
START list	Checked to see if this IE is present
AM_RLC error indication(RB2, RB3 or RB4)	FALSE
AM_RLC error indication(RB>4)	FALSE
Cell update cause	Check to see if it is set to "Periodical cell update"
Failure case	Check to see if it is absent
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
- Measurement results for monitored cells	
- SFN-SFN observed time difference	Check to see if it is absent
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

MEASUREMENT REPORT (Step 15)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain IE "measured result" to report cell 2's CPICH RSCP value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall perform a cell update procedure and transmit a CELL UPDATE message. In this message, measured values CPICH RSCP for cell 1 and cell 3 shall be included in the IE "measured results on RACH".

After step 14, the UE shall apply the intra-frequency measurement reporting criteria" received in System Information Block type 12 messages of step 9. It shall send MEASUREMENT REPORT messages at 500 milliseconds interval. In these messages, triggering of event '1a' shall be reported in IE "Event results" with IE "Primary CPICH info" containing the primary scrambling code for cell 3.

The message shall contain IE "measured result" to report CPICH RSCP values of cell 1and 3.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.4.1.7 Measurement Control and Report: Intra-frequency measurement for transition from CELL_FACH to CELL_DCH state (FDD)

8.4.1.7.1 Definition

8.4.1.7.2 Conformance requirement

Upon transition from CELL_FACH to CELL_DCH state:

1> if intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> if the cell in which the UE transited from CELL_FACH state is included in the active set for the CELL_DCH state, the UE shall:

3> resume the measurement reporting.

2> otherwise:

3> the UE should not resume the measurement reporting. If the UE does not resume the measurement reporting, the measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

…

Upon cell reselection while in CELL_FACH/CELL_PCH/URA_PCH state and the cell reselection has occurred after the measurement control information was stored, the UE shall:

1> delete all measurements of type intra-frequency, inter-frequency, and inter-RAT associated with the variable MEASUREMENT_IDENTITY;

…

1> delete the traffic volume measurements that have not been set up or modified through a MEASUREMENT CONTROL message.

…

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

1> if the IE "Measurement command" has the value "setup":

2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;

2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:

3> if the UE is in CELL_FACH state:

4> the UE behaviour is not specified.

2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:

…

2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:

…

2> for measurement type "UE positioning measurement":

…

2> for any other measurement type:

3> if the measurement is valid in the current RRC state of the UE:

4> begin measurements according to the stored control information for this measurement identity.

1> if the IE "Measurement command" has the value "modify":

2> for all IEs present in the MEASUREMENT CONTROL message:

3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":

4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:

5> if the UE is in CELL_FACH state:

6> the UE behaviour is not specified.

4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

…

5> replace the corresponding information (the IEs listed above and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.

1> if the IE "measurement command" has the value "release":

2> terminate the measurement associated with the identity given in the IE "measurement identity";

2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

"If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

1> for intra-frequency measurement and inter-frequency measurement:
2> include the IE "Cell Measured Results" for cells (excluding cells of another RAT) that satisfy the condition (such as "Report cells within active set") specified in the IE "Reporting Cell Status", in descending order by the measurement quantity"

If the IE "Cells for measurement" has been included in a MEASUREMENT CONTROL message, only monitored set cells explicitly indicated for a given intra-frequency (resp. inter-frequency, interRAT) measurement by the IE "Cells for measurement" shall be considered for measurement. If the IE "Cells for measurement" has not been included in a MEASUREMENT CONTROL message, all of the intra-frequency (resp. inter-frequency, inter RAT) cells stored in the variable CELL_INFO_LIST shall be considered for measurement. The IE "Cells for measurement" is not applicable to active set cells or virtual active set cells e.g. when the triggering condition refers to active set cells, the UE shall consider all active set cells in the CELL_INFO_LIST for measurement irrespective if these cells are explicitly indicated by the IE "Cells for measurement".

Reference

3GPP TS 25.331, clause 8.4.1.3, 8.4.1.6a, 8.4.1.7.1, 8.4.0 and 8.6.7.9

8.4.1.7.3 Test Purpose

- To confirm that UE retrieves stored measurement control information for intra-frequency measurement type with "measurement validity" assigned to "CELL_DCH", after it enters CELL_DCH state from CELL_FACH state.

- To confirm that the UE continues to monitor the neighbouring cells listed "intra-frequency cell info" IE in the System Information Block type 11 or 12 messages, if no intra-frequency measurements applicable to CELL_DCH are stored.

- To confirm that the UE transmits MEASUREMENT REPORT messages if reporting criteria stated in IE "intra-frequency measurement reporting criteria" in System Information Block type 11 or 12 messages are fulfilled.

- To confirm that a MEASUREMENT CONTROL message received in CELL_DCH state overrides the measurement and associated reporting contexts maintained in the UE by virtue of System Information Block type 11 or 12 messages only if the measurement identities defined within the MEASUREMENT CONTROL message and System Information Block type 11 or 12 are identical.

- To confirm that the UE delete all measurements of type intra-frequency upon cell reselection while in CELL_FACH.

8.4.1.7.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11).

Test Procedure

Table 8.4.1.7-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.7-1

Para-meter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
CPICH Ec	dBm /3.84 MHz	-60	-70	-70	-65	-60	-60	-70	-70	-60

The UE is brought to CELL_FACH state in cell 1. (step 1) SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

SS sends a RADIO BEARER RECONFIGURATION message to UE (step2), and configures dedicated physical channels on both uplink and downlink directions. The UE shall move to CELL_DCH state and then return RADIO BEARER RECONFIGURATION COMPLETE message (step3). The UE shall send a MEASUREMENT REPORT message containing IE "Measured results" to report cell 2's CPICH RSCP value and IE "event results" to report triggering of event type "1e" (step 4). After receiving the MEASUREMENT REPORT message, SS transmits a MEASUREMENT CONTROL message with only cell 3 included in the IE "intra-frequency cell info" (step 5). After receiving such a message, the UE shall transmit another set of MEASUREMENT REPORT message for measurement identity = 11. SS verifies that measurement readings for cell 3 's CPICH RSCP are reported in IE "cell measured results" in this message (step 6). Cell 3 shall also trigger event 1e for the measurement that the UE had stored from system information, so a MEASUREMENT REPORT message shall be received for measurement identity = 10 (step 6a) as well. The order of steps 6 and 6a is not important and could be reversed.

Next, SS sends a PHYSICAL CHANNEL RECONFIGURATION message (step 7). SS configures common physical channels for both the uplink and the downlink directions. The UE shall transit to CELL_FACH state and then reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 8). SS waits and checks the uplink RACH to confirm that no MEASUREMENT REPORT messages are received (step 9).

SS transmits then a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL_DCH state (step 9a). The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS (step 9b). Shortly after, a MEASUREMENT REPORT message shall be received that has been triggered by cell 2, i.e. the UE shall have deleted the measurement configured through the MEASUREMENT CONTROL message of step 5, and instead apply the measurement configured in SIB12: a MEASUREMENT REPORT message with measurement identity 10 shall be received while no such message with measurement identity 11 shall be sent by the UE (step 9c).

SS transmits MEASUREMENT CONTROL message on the downlink DCCH, to configure intra-frequency measurements with validity CELL_DCH (step 10). The UE shall send a MEASUREMENT REPORT message (with IE “Measurement identity” = 12) to the SS triggered by cell 2 (step 14).

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to move it to CELL_FACH state (step 14a). The UE shall move to that state and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS (step 14b). SS shall wait and check that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 14c).

SS transmits a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL_DCH state (step 14d). The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS (step 14e). Shortly after, a MEASUREMENT REPORT message shall be received that has been triggered by cell 2, i.e the UE shall have retrieved the measurement configured through the MEASUREMENT CONTROL message of step 10 (step 14f). The UE shall also apply the measurement configured in SIB12: a MEASUREMENT REPORT message with measurement identity 10 shall be received (step 15). The order of steps 14f and 15 is not important and could be reversed.

.

Following the reception of the MEASUREMENT REPORT messagse, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12 (step 16). Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH with "measurement identity" = 12 (step 16a). After this requirement is satisfied, SS sends MEASUREMENT CONTROL on the downlink DCCH once more (step 17). This message is identical to the one sent in step 10 (see specific message content). A MEASUREMENT REPORT message shall be received from the UE triggered by cell 2 (step 17a).

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH and configures common physical channel (step 18). The UE shall transit to CELL_FACH state and then respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 19). SS monitors the uplink DCCH once more to verify that no MEASUREMENT REPORT messages are detected (step 20). SS modifies the downlink transmission power of the respect cells according to the settings in columns "T1" in table 8.4.1.7-1. System information block type 11 and System Information Block type 12 for cell 2 shall be different from the default settings according to what is defined in the specific message content part of this section (step 21). The UE shall initiate a cell re-selection procedure. This is verified in the SS when a CELL UPDATE message is received on the uplink CCCH with the "cell update cause" IE set to "cell reselection" (step 22). SS transmits a CELL UPDATE CONFIRM message, which includes "New C-RNTI", on the DCCH (step 23). Then the UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message (step 23a). Next, SS sends a RADIO BEARER RECONFIGURATION message on the downlink DCCH, assigning dedicated physical channels in both uplink and downlink directions (step 24). The UE shall respond with a RADIO BEARER RECONFIGURATION COMPLETE message and then return to CELL_DCH state (step 25). SS modifies the downlink transmission power of all cells according to the settings in columns "T2" in table 8.4.1.7-1. UE shall then send MEASUREMENT REPORT messages reporting cell 3's CPICH RSCP according to the content in System Information Block type 12 messages broadcasted in cell 2 (step 21).SS transmits a MEASUREMENT CONTROL message (step 27) whereby the measurement identity is set to the same value as that in the SIB type 12 messages (step 21). UE shall send MEASUREMENT REPORT message (step 28) reporting cell 3's CPICH RSCP according to the MEASUREMENT CONTROL message (step 27).

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		System Information Block type 11 and 12	UE is initially in PS-DCCH+DTCH_FACH (state 6-11) in cell 1. System Information Block type 11 and 12 messages are changed with respect to the default contents according to the descriptions in "Specific Message Contents" clause.
1a	←		SYSTEM INFORMATION CHANGE INDICATION	
2	←		RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
4	→		MEASUREMENT REPORT	Reports cell 2's CPICH RSCP measurement value, with “measurement identity” IE set to “10”.
5	←		MEASUREMENT CONTROL	Cell 3 is added to the list of monitored set of the UE.
6	→		MEASUREMENT REPORT	Cell 3 shall trigger the event 1e configured in the measurement identity 11. NOTE: due to ambiguity in 25.331 – two interpretations can be given. These are shown in the specific message contents below.
6a	→		MEASUREMENT REPORT	Cell 3 shall also trigger the event 1e configured in the measurement identity 10. The order of steps 6 and 6a could be reversed.
7	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
9				SS waits and checks that no MEASUREMENT REPORT messages are sent by UE.
9a	←		RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
9b	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
9c	→		MEASUREMENT REPORT	UE shall report cell 2's CPICH RSCP measurement value, with “measurement identity” IE set to “10”.
9d	←		Void	
9e	→		Void	
10	←		MEASUREMENT CONTROL	SS instructs the UE to setup intra-frequency measurement and reporting for cell 2. Measurement validity" IE is set to CELL_DCH state.
11				

Step	Direction		Message	Comment
	UE	SS		
12	←		Void	
13	→		Void	
13a		→	MEASUREMENT REPORT	UE shall report cell 2's CPICH RSCP measurement value, with “measurement identity” IE set to “10”. Note: The order of steps 13a and 14 could be reversed.
14	→		MEASUREMENT REPORT	UE reports cell 2's measured results for CPICH RSCP, with “measurement identity” IE set to “12”.
14a	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
14b	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
14c				SS waits and check that no MEASUREMENT REPORT messages are sent by the UE.
14d	←		RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
14e	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
14f	→		MEASUREMENT REPORT	UE shall have retrieved and resumed the measurement set up through the MEASUREMENT CONTROL of step 10.The “measurement identity” IE shall be set to “12”.
15		→	MEASUREMENT REPORT	UE shall report cell 2's CPICH RSCP measurement value, with “measurement identity” IE set to “10”. The order of steps 14f and 15 could be reversed.
16	←		MEASUREMENT CONTROL	Terminate all the intra-frequency measurement and reporting activities related to "measurement identity" = 12.
16a				SS waits and verifies that UE stops transmitting MEASUREMENT REPORT messages with “measurement identity” = 12.
17	←		MEASUREMENT CONTROL	This message is the same as in step 10.
17a	→		MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 2, with “measurement identity” IE set to “12”.
17b		→	MEASUREMENT REPORT	UE shall report cell 2's CPICH RSCP measurement value, with “measurement identity” IE set to “10”. Note: The order of steps 17a and 17b could be reversed.
18	←		PHYSICAL CHANNEL RECONFIGURATION	Allocates common physical channels.

Step	Direction		Message	Comment
	UE	SS		
19	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
20				SS checks that no MEASUREMENT REPORT messages are received.
21	←		System Information Block type 11 System Information Block type 12	SS sends SIB11 and SIB12 with specific values to Cell2. SS reconfigures the downlink transmission power settings for cells 1 to 3 according to column "T1" in table 8.4.1.7.
22	→		CELL UPDATE	UE shall re-selects to cell 2 and then perform a cell update procedure.
23	←		CELL UPDATE CONFIRM	UE shall stay in CELL_FACH state.
23a	→		UTRAN MOBILITY INFORMATION CONFIRM	
24	←		RADIO BEARER RECONFIGURATION	Dedicated physical channels are assigned to the UE in this message.
25	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state.UE shall not send Measurement Report message with “measurement identity” = ‘12’.
25a				SS reconfigures the downlink transmission power settings of all cells according to column “T2” in table 8.4.1.7-1.
26	→		MEASUREMENT REPORT	UE begins to report cell 3's measured results for CPICH RSCP, with “measurement identity” IE set to “1”.
27	←		MEASUREMENT CONTROL	
28	→		MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 3, with “measurement identity” IE set to “1”.

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

Master Information Block (Step 1)

Information Element	Value/Remarks
MIB Value Tag	3

System Information Block type 11 for cell 1 (Step 1)

All messages content below shall use the same content as described in default message content specified in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS34.108
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Cells for measurement	Not present
- Intra-frequency measurement quantity	Not present
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	Not present
- Inter-frequency measurement system information	As per 34.108 clause 6.1.0b - Contents of System Information Block type 11 (FDD)
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not Present

System Information Block type 12 for cell 1 (Step 1)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	10
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	No report
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not present
- Triggering condition 2	Monitored set cells
- Reporting range constant	Not present

- Cells forbidden to affect reporting range	Not present
- W	Not present
- Hysteresis	0 dB
- Threshold used frequency	-80 dBm
- Reporting deactivation threshold	Not present
- Replacement activation threshold	Not present
- Time to trigger	0
- Amount of reporting	Not Present
- Reporting Interval	Not Present
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

SYSTEM INFORMATION CHANGE INDICATION (Step 1a)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value Tag	3
- BCCH modification time	Not Present

RADIO BEARER RECONFIGURATION (Step 2, Step 9a, Step 14d and Step 24)

Use the same message type found in Annex A, with condition set to A4.

MEASUREMENT REPORT (Steps 4, 9c, 13a, 15 and 17b)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 5).

Information Element	Value/remark
Measurement Identity	11
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells selection and Re-selection info	Not Present
- Cells for measurement	
- Intra-frequency cell id	3
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 3
- W	Not Present
- Hysteresis	0 dB

- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold used frequency	-90 dBm
- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

NOTE: due to ambiguity in 25.331 – two interpretations can be given for MEASUREMENT REPORT

Information Element	Value/remark
Measurement identity	Check to see if set to 11
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

MEASUREMENT REPORT (Step 6)

NOTE: due to ambiguity in 25.331 – two interpretations can be given for MEASUREMENT REPORT

Information Element	Value/remark
Measurement identity	Check to see if set to 11
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

MEASUREMENT REPORT (Step 6a)

Information Element	Value/remark
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

PHYSICAL CHANNEL RECONFIGURATION (Steps 7, 14a and 18)

Use the same message sub-type found in clause 9 of TS 34.108, which is entitled "Packet to CELL_FACH from CELL_DCH in PS".

MEASUREMENT CONTROL (Steps 10 and 17)

Information Element	Value/remark
Measurement Identity	12
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra- frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	
- UE state	CELL_DCH
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 2
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold Used Frequency	-80 dBm

- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Steps 14, 14f and 17a)

Information Element	Value/remark
Measurement identity	Check to see if set to 12
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 16)

Information Element	Value/remark
Measurement Identity	12
Measurement Command	Release
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE Measurement type	Not Present
DPCH compressed mode status info	Not Present

System Information Block type 11 for cell 2 (Step 21)

All messages content below shall use the same content as described in default message content specified in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/Remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	Not present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Not present
- Cells for measurement	Not present
- Intra-frequency measurement quantity	
- Filter coefficient	Not Present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	Not present

System Information Block type 12 for cell 2 (Step 21)

Information Element	Value/Remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	Not Present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	Not present
- Maximum number of reported cells on RACH	Not present
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Intra-frequency event identity	1a
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Not Present
- W	0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

CELL UPDATE (Step 22)

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Cell Re-selection'
Protocol error indicator	Check to see if it is absent or set to 'FALSE'
Measured results on RACH	Check to see if it is absent
Protocol error information	Check to see if it is absent

CELL UPDATE CONFIRM (Step 23)

Use the default message content of the same message type in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 23a)

Only the message type is checked.

MEASUREMENT REPORT (Step 26)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1a'
- Cell measurement event results	
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

Note: Cells 2 and 3 can be received in any order

MEASUREMENT CONTROL (Step 27)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	Not present
- Cells for measurement	
- Intra-frequency cell id	3
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present
- Measurement quantity	CPICH RSCP

- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 3
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold used frequency	-90 dBm
- Time to Trigger	0
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 28)

Information Element	Value/remark
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	

- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

8.4.1.7.5 Test Requirement

After step 3 the UE shall report cell 2's CPICH RSCP value by transmitting MEASUREMENT REPORT messages.

After step 5 the UE shall transmit two MEASUREMENT REPORT messages which contain measured results of cell 3's CPICH RSCP value only, one for measurement identity 10 and one for measurement identity 11.

After step 9 and step 11 the UE shall not transmit MEASUREMENT REPORT messages, which pertain to intra-frequency type measurement reporting.

After step 9b, the UE shall transmit a MEASUREMENT REPORT according to what is broadcast in SIB 11 and 12 of cell 1, and MEASUREMENT REPORT message pertaining to the MEASUREMENT CONTROL message that it had received in step 5.

After steps 13 and 14e, the UE shall resume the measurement and reporting activities as specified in MEASUREMENT CONTROL message received in step 10. The UE shall transmit MEASUREMENT REPORT messages, containing measured results of cell 2's CPICH RSCP value.

After step 14e, the UE shall transmit a MEASUREMENT REPORT according to what is broadcast in SIB 11 and 12 of cell 1.

After step 16 the UE shall stop measurement activities pertaining to event triggered reporting of cell 2's CPICH RSCP, no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH with “measurement identity” = 12.

After step 17, the UE shall transmit a MEASUREMENT REPORT message to the SS as specified in the MEASUREMENT CONTROL message received in step 17.

After step 21 the UE shall re-select to cell 2 and initiate a cell update procedure. SS shall receive a CELL UPDATE message on the uplink CCCH of cell 2, with the "cell update cause" IE stated as "cell re-selection".

After step 23, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.

After step 25, UE shall not send MEASUREMENT REPORT message with “measurement identity” = ‘12’.

After step 25a the UE shall report cell 3's CPICH RSCP value by transmitting MEASUREMENT REPORT messages.

After step 27, UE shall send MEASUREMENT REPORT message with “measurement identity” = ‘1’.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.4.1.8 Measurement Control and Report: Inter-frequency measurement for transition from CELL_FACH to CELL_DCH state (FDD)

8.4.1.8.1 Definition

8.4.1.8.2 Conformance requirement

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 12 (or System Information Block type 11);

1> retrieve each set of measurement control information of measurement type "inter-frequency" stored in the variable MEASUREMENT_IDENTITY; and

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH":

2> resume the measurement reporting.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires UL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'DL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE, according to its measurement capabilities, and for the measurement purpose indicated by IE "TGMP", requires DL compressed mode for measurements on any of the cells to be measured according to UE variable CELL_INFO_LIST, and CHOICE 'UL/DL mode' indicates 'UL only':

2> set the variable INVALID_CONFIGURATION to TRUE.

1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:

2> set the variable INVALID_CONFIGURATION to TRUE.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "TGPS Status Flag"):

2> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" received in this message, when the new configuration received in this message is taken into use.

1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";

1> update into the variable TGPS_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters ";

1> after the new configuration has been taken into use:

2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" at the time indicated by IE "TGCFN"; and

2> begin the inter-frequency corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in TS 25.331 subclause 8.2.11.2.

Reference

3GPP TS 25.331 clause 8.4.1.7.2, 8.4.1.3

8.4.1.8.3 Test Purpose

1. To confirm that the UE stops monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 or 12 when it transits from CELL_FACH state to CELL_DCH state.

2. To confirm that the UE resumes inter-frequency measurements and reporting stored for which the measurement control information has IE "measurement validity" assigned to the value "CELL_DCH", after it re-enters CELL_DCH state from CELL_FACH state.

3. To confirm that the UE resumes inter-frequency measurement and reporting activities after it has received a MEASUREMENT CONTROL message specifying that a stored compressed mode pattern sequence be re-activated.

8.4.1.8.4 Method of test

Initial Condition

System Simulator: 3 cells – Cells 1, cell 4 and cell 5 are active.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Compressed mode required yes/no

In case the UE supports both PS and CS CN domains, this test shall be run twice, once starting from the initial condition CS-DCCH+DTCH_DCH, and once starting from the initial condition PS-DCCH+DTCH_DCH.

Test Procedure

Table 8.4.1.8-1 illustrates the downlink power to be applied for the 3 cells in this test.

Table 8.4.1.8-1

Para-meter	Unit	Cell 1	Cell 4	Cell 5
UTRA RF Channel Number		Ch. 1	Ch. 2	Ch. 2
CPICH Ec	dBm/3.84 MHz	-60	-75	-75

Test procedure when the initial condition is that the UE is connected to the PS domain:

The UE is in CELL_DCH state in cell 1 (step 1). SS transmits MEASUREMENT CONTROL message to add cell 5 into the IE "inter-frequency cell info" (step 2). If UE requires compressed mode, SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH after it has transmitted the MEASUREMENT CONTROL message. (step 3). SS checks that the UE sends a MEASUREMENT REPORT message on the uplink DCCH only if UE does not require compressed mode.

SS sends a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH to move the UE to CELL_FACH state (step 4). The UE shall reconfigure itself to receive and transmit using the common physical channels assigned, and send PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH (step 5). SS modifies the content of Master Information Block and System Information Block type 12 messages, such that cell 4 is added in the list of cells assigned in the IE "inter-frequency cell info" (step 6). SS transmits SYSTEM INFORMATION CHANGE INDICATION message to UE. Once again, SS verifies that the UE does not transmit MEASUREMENT REPORT messages in the uplink direction (step 7).

SS sends PHYSICAL CHANNEL RECONFIGURATION message, and configures dedicated physical. If UE requires compressed mode, in this message, SS commands the UE to start applying compressed mode mechanism for DPCH. The UE shall move to CELL_DCH state and then reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 9). SS waits for 10 seconds. The UE shall transmit 1 MEASUREMENT REPORT message, containing the selected frequency quality estimate (in this case CPICH RSCP) of cell 4. The UE shall also report the triggering of event '2c' in the IE "Event results" of MEASUREMENT REPORT message (step 10).

SS transmits a MEASUREMENT CONTROL message on the downlink DCCH using AM-RLC (step 11). The UE shall transmit MEASUREMENT REPORT messages at 2 seconds interval (step 12).

If UE requires compressed mode, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message and deactivates the compressed mode pattern sequence with "TGPSI" IE set to 1 (step 13). The UE shall respond by sending PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and also stop the periodic reporting activities (step 14).

Following this if UE requires compressed mode, SS sends a MEASUREMENT CONTROL message and re-activates the compressed mode pattern sequence by using the "DPCH compressed mode status" IE (step 15). SS confirms that the UE has reconfigured itself to start measurement reporting again. The SS shall receive MEASUREMENT REPORT messages continuously at 2 seconds interval (step 16). The SS then sends a MEASUREMENT CONTROL ordering the UE to release the measurement corresponding to identity 14, and to stop compressed mode (step 17). At reception of that message, the UE shall stop compressed mode and delete the measurement corresponding to that identity (step 18). The SS then transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to order the UE to start compressed mode once again (step 19). The UE answers with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message, and starts compressed mode (step 20). SS checks then that it does not receive any MEASUREMENT REPORT message from the UE after that point (step 21).

Test procedure when the initial condition is that the UE is connected to the CS domain:

The UE is in CELL_DCH state in cell 1 (step 1). SS transmits MEASUREMENT CONTROL message to add cell 5 into the IE "inter-frequency cell info" (step 2). SS checks that the UE sends a MEASUREMENT REPORT messages on the uplink DCCH only if UE does not require compressed mode (step 3).

If the UE requires compressed mode, SS sends PHYSICAL CHANNEL RECONFIGURATION message (step 8). In that message, SS commands the UE to start applying compressed mode. The UE shall then reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (step 9). Following this, a UE requiring compressed mode shall transmit 1 MEASUREMENT REPORT message, containing the selected frequency quality estimate (in this case CPICH RSCP) of cell 5. The UE shall also report the triggering of event '2c' in the IE "Event results" of MEASUREMENT REPORT message (step 10).

SS transmits a MEASUREMENT CONTROL message on the downlink DCCH using AM-RLC (step 11). The UE shall transmit MEASUREMENT REPORT messages at 2 seconds interval (step 12).

If the UE requires compressed mode, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message and deactivates the compressed mode pattern sequence with "TGPSI" IE set to 1 (step 13). The UE shall respond by sending PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and also stop the periodic reporting activities (step 14). Following this if the UE requires compressed mode, SS sends a MEASUREMENT CONTROL message and re-activates the compressed mode pattern sequence by using the "DPCH compressed mode status" IE (step 15). SS confirms that the UE has reconfigured itself to start measurement reporting again. The SS shall receive MEASUREMENT REPORT messages continuously at 2 seconds interval (step 16). The SS then sends a MEASUREMENT CONTROL ordering the UE to release the measurement corresponding to identity 14, and to stop compressed mode (step 17). At reception of that message, the UE shall stop compressed mode and delete the measurement corresponding to that identity (step 18). The SS then transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to order the UE to start compressed mode once again (step 19). The UE answers with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message, and starts compressed mode (step 20). SS checks then that it does not receive any MEASUREMENT REPORT message from the UE after that point (step 21).

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		

Step	Direction		Message	Comment
	UE	SS		
1				(Valid for both the PS and CS cases) The initial state of UE is in CELL_DCH state of cell 1.
2	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS specifies inter-frequency measurement and reporting parameters for cell 5, with "measurement validity" IE present and "UE state" set to "CELL_DCH".
3	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) If compresed mode is not required (refer ICS/IXIT), SS checks that UE transmit this message, or else SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH.
4	←		PHYSICAL CHANNEL RECONFIGURATION	(Only in the PS case) SS moves the UE to CELL_FACH state.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Only in the PS case) UE shall move to CELL_FACH state.
6	←		Master Information Block System Information Block type 12	(Only in the PS case) SS modifies MIB and SIB 12 in order to include cell 4 into the list of cells in IE "inter-frequency cell info".
7	←		SYSTEM INFORMATION CHANGE INDICATION	(Only in the PS case) After SS transmits this message, SS confirms that there are no transmissions of MEASUREMENT REPORT message in the uplink direction.
8	←		PHYSICAL CHANNEL RECONFIGURATION	(Valid for both the PS and CS cases) For the CS case, this step only applies only if the UE requires compressed mode. See specific message content below.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Valid for both the PS and CS cases) For the CS case, this step only applies only if the UE requires compressed mode. UE shall move to CELL_DCH state.

Step	Direction		Message	Comment
	UE	SS		
10	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) In the PS case, UE shall resume inter-frequency measurement task for cell 4 and report the measured CPICH RSCP value for cell 4. In the CS case, a UE requiring compressed mode shall start inter-frequency measurement task for cell 5 and report the measured CPICH RSCP value for cell 5. In the CS case, SS shall check that a UE not requiring compressed mode shall not send any MEASUREMENT REPORT.
11	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS changes the reporting criteria for cell 5 to 'periodic reporting'
12	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) UE shall begin to transmit this message at 2 seconds interval. If compresed mode is not required (refer ICS/IXIT), the test ends here.
13	←		PHYSICAL CHANNEL RECONFIGURATION	(Valid for both the PS and CS cases) SS deactivates the currently used pattern sequence for compressed mode operation.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Valid for both the PS and CS cases) UE stays in CELL_DCH state. SS verifies that no MEASUREMENT REPORT messages are received.
15	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS activates the pattern sequence stored by the UE.
16	→		MEASUREMENT REPORT	(Valid for both the PS and CS cases) SS checks that MEASURE-MENT REPORT messages are received at 2 seconds interval.
17	←		MEASUREMENT CONTROL	(Valid for both the PS and CS cases) SS orders the UE to release the measurement with identity 14, and to stop compressed mode
18				(Valid for both the PS and CS cases) SS checks that the UE has stopped compressed mode.

Step	Direction		Message	Comment
	UE	SS		
19	←		PHYSICAL CHANNEL RECONFIGURATION	(Valid for both the PS and CS cases) SS orders the UE to start compressed mode again.
20	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(Valid for both the PS and CS cases) The UE transmits the response message and starts compressed mode
21				(Valid for both the PS and CS cases) SS checks that the UE does not send any MEASUREMENT REPORT

Specific Message Content

Unless explicitly stated, the messages below shall be used for both the CS case and the PS case.

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause ~~9~~ 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 2)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 5
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 5
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	
-UE autonomous update	On with no reporting
- Non autonomous update mode	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	1.0 dB
- Time to trigger	10 ms
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2

- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non-used frequency	0.0
DPCH compressed mode status info	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in [9] TS 34.108 clause 9 titled "(Packet to CELL_FACH from CELL_DCH in PS)".

Information Element	Value/Remark
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Scrambling code for cell 1. Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	Not Present
- SCCPCH Information for FACH	Not Present

Master Information Block (Step 6)

Information Element	Value/Remark
Value Tag	2

System Information Block type 12 (Step 6)

Information Element	Value/remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
-Use of HCS	Not used
-Cell selection and reselection quality measure	CPICH Ec/No
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cells removal	Not Present
- New inter-frequency info list	
- Inter-frequency cell id	Set to id of cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.4 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 8 for the PS case)

If UE do not require compressed mode, use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

If UE requires compressed mode, use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialise
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset $P_{Pilot\text{-}DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set

- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE mode	FDD
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	undefined
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL UL only or DL only depending on UE capability
- Downlink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2 (or not sent, depending on UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0

PHYSICAL CHANNEL RECONFIGURATION (Step 8 for the CS case)

Information Element	Value/Remark
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE *channel requirement*	Not Present
CHOICE *mode*	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- CHOICE mode	FDD
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	undefined
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to scrambling code of cell 1
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel	Primary CPICH may be used

estimation	
- DPCH frame offset	0
- Secondary CPICH info	Not present
- DL channelisation code	
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Same as the code currently allocated to the UE
- Scrambling code change	Code change
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

MEASUREMENT REPORT (Step 3 for both the PS and the CS case, and step 10 for the CS case)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	
- CHOICE event result	Inter-frequency event results
- Inter-frequency event identity	Check to see if it's set to '2c'
- Inter-frequency cells	
- Frequency Info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- Non frequency related measurement event results	
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5

MEASUREMENT REPORT (Step 10 for the PS case)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	
- CHOICE event result	Inter-frequency event results
- Inter-frequency event identity	Check to see if it's set to '2c'
- Inter-frequency cells	
- Frequency Info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- Non frequency related measurement event results	
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4

MEASUREMENT CONTROL (Step 11)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Set up
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 5
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 5
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	5
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not Present
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	2000 milliseconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12, 16)

Information Element	Value/remark
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- CFN-SFN observed time difference	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message transmitted in step 8 with the following modifications:

Information Element	Value/Remark
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE *channel requirement*	Not Present
CHOICE *mode*	FDD
>Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- CHOICE mode	FDD
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

MEASUREMENT CONTROL (Step 15)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Not Present
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256

MEASUREMENT CONTROL (Step 17)

Information Element	Value/remark
Measurement Identity	14
Measurement Command	Release
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Not Present
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Flag	Deactivate
- TGCFN	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 19 for the PS case)

Information Element	Value/Remark
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE *channel requirement*	Not Present
CHOICE *mode*	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- CHOICE mode	FDD
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	undefined
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 19 for the CS case)

Information Element	**Value/Remark**
Activation time	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
New DSCH-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
Downlink counter synchronisation info	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE *channel requirement*	Not Present
CHOICE *mode*	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Not Present
- CHOICE mode	FDD
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Activate
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	undefined
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL, UL only or DL only (depending on the UE capability)
- Downlink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Uplink compressed mode method	SF/2 (or not sent, depending on the UE capability)
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to scrambling code of cell 1
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0

- Secondary CPICH info	Not present
- DL channelisation code	
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Same as the code currently allocated to the UE
- Scrambling code change	Code change
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

8.4.1.8.5 Test Requirement

After step 2, if UE requires compressed mode the UE shall not send any MEASUREMENT REPORT messages on the uplink DCCH of cell 1. If UE do not require compressed mode, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH of cell 1.

After step 4 and 8, UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 8, the UE shall start compressed mode using the method specified in the PHYSICAL CHANNEL RECONFIGURATION message sent in step 8.

After step 9 the UE shall transmit a MEASUREMENT REPORT message, containing the IE "measured results" reporting cell 5's CPICH RSCP value in CS case and cell 4's CPICH RSCP value in the PS case. The UE shall also report the triggering of event '2c' by including IE "Event results" in the MEASUREMENT REPORT message.

After step 11 the UE shall send MEASUREMENT REPORT messages, containing cell 5's CPICH RSCP measured value in IE "Measured results" at 2 seconds interval. The "Event results" IE shall be omitted in these messages.

If UE requires compressed mode, after step 14, the UE shall not transmit any MEASUREMENT REPORT messages.

If UE requires compressed mode, after step 15, the UE shall start compressed mode and resume the transmission of MEASUREMENT REPORT messages with identical contents as in those received after step 11.

After step 17, the UE shall deactivate compressed mode.

After step 20, the UE shall not transmit any MEASUREMENT REPORT message to SS.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.4.1.18 Measurement Control and Report: Traffic volume measurement for transition from CELL_FACH state to CELL_DCH state

8.4.1.18.1 Definition

8.4.1.18.2 Conformance requirement

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

- retrieve each set of measurement control information of measurement type "traffic volume" stored;
  - if the optional IE "measurement validity" for this measurement has not been included:

- delete the measurement;

- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states except CELL_DCH":

  - stop measurement reporting; and

  - save the measurement to be used after the next transition to CELL_FACH state;

- if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":

  - continue measurement reporting;

- if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "CELL_DCH":

  - resume this measurement and associated reporting;

- if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message when transiting to CELL_DCH state:

  - continue an ongoing traffic volume type measurement, assigned in System Information Block type 11 or System Information Block type 12.

Reference

3GPP TS 25.331 clause 8.4.1.7.4

8.4.1.18.3 Test Purpose

1. To confirm that the UE performs traffic volume measurements and the associated reporting when it enters CELL_DCH state from CELL_FACH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL_DCH state have been previously stored.

2. To confirm that the UE shall continue to perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions stated in System Information Block type 11 or 12 messages have been satisfied.

8.4.1.18.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108

Test Procedure

Initially the UE is in CELL_FACH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL_FACH state to CELL_DCH state. While entering CELL_DCH state from CELL_FACH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL_DCH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL_FACH

state from CELL_DCH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

The behavior of the UE when moved from CELL_FACH state to CELL_DCH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL_DCH state" or "CELL_DCH state" or "All states" is tested in a similar way.

When the UE is in CELL_FACH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. A SYSTEM INFORMATION CHANGE INDICATION is sent on FACH to inform the UE about the change. The UE is taken to CELL_DCH state from CELL_FACH state using RADIO BEARER RECONFIGURATION procedure. In CELL_DCH state the UE shall continue traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2	→		MEASUREMENT REPORT	
3	←		RADIO BEARER RECONFIGURATION	
4	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6	←		RADIO BEARER RECONFIGURATION	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
8				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
9	←		MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10	→		MEASUREMENT REPORT	.
11	←		RADIO BEARER RECONFIGURATION	
12	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).

13			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
14	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21	→	MEASUREMENT REPORT	
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).

29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
33	←	MIB and SIB12 modified	Traffic volume measurements and reporting is assigned to Ues
33a	←	SYSTEM INFORMATION CHANGE INDICATION	
34	→	MEASUREMENT REPORT	
35	←	RADIO BEARER RECONFIGURATION	
36	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement assigned in System Information (Step 33).
37	→	MEASUREMENT REPORT	
38	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 1)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

The order in which the RBs are reported is not checked.

Information Element	Value/remark
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 35)

Use the same message type found in TS 34.108 clause 9 with condition set to A4.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in TS 34.108 clause 9 with condition set to A5.

MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

MEASUREMENT REPORT (Step 10)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

MEASUREMENT CONTROL (Step 14)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

MEASUREMENT REPORT (Step 21)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

Master Information Block (Step 33)

Information Element	Value/Remarks
MIB Value Tag	2

System Information Block type 12 (Step 33) (FDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All states
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

System Information Block type 12 (Step 1) (TDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	FALSE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All states
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodocal
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

SYSTEM INFORMATION CHANGE INDICATION (Step 33a)

Information Element	Value/Remarks
Paging record list	Not Present
BCCH modification info	
- MIB Value Tag	2
- BCCH modification time	Not Present

MEASUREMENT REPORT (Step 34, and 37)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 38)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.18.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 21, 29 and 37. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 13.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.4.1.19 Measurement Control and Report: Traffic volume measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.19.1 Definition

8.4.1.19.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH or CELL_PCH or URA_PCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "traffic volume" stored in the variable MEASUREMENT_IDENTITY; and

2> if the optional IE "measurement validity" for this measurement has not been included:

3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.

2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":

3> stop measurement reporting;

3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.

2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":

3> continue measurement reporting.

2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":

3> resume this measurement and associated reporting.

1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL_FACH or CELL_PCH or URA_PCH states (stored in the variable MEASUREMENT_IDENTITY), which has the same identity as the one indicated in the IE "Traffic volume measurement system information":

2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT_IDENTITY;

2> begin traffic volume measurement reporting according to the assigned information.

Reference

3GPP TS 25.331 clauses 8.4.1.6.6.

8.4.1.19.3 Test Purpose

1. The UE shall performs traffic volume measurements and the associated reporting when it enters CELL_FACH state from CELL_DCH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL_FACH state have been previously stored.

2. The UE shall perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions has been satisfied.

Reference

3GPP TS 25.331 clause 8.4.1.6.6

8.4.1.19.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

Initially the UE is in CELL_DCH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL_DCH state to CELL_FACH state. While entering CELL_FACH state from CELL_DCH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL_FACH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL_DCH state from CELL_FACH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

The behavior of the UE when moved from CELL_DCH state to CELL_FACH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL_DCH state" or "CELL_DCH state" or "All states" is tested in a similar way.

When the UE is in CELL_DCH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. The UE is taken to CELL_FACH state from CELL_DCH state using RADIO BEARER RECONFIGURATION procedure. In CELL_FACH state the UE shall perform traffic volume

measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2	→		MEASUREMENT REPORT	
3	←		RADIO BEARER RECONFIGURATION	
4	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6	←		RADIO BEARER RECONFIGURATION	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
8				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
9	←		MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
11	←		RADIO BEARER RECONFIGURATION	
12	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13	→		MEASUREMENT REPORT	
14	←		MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).

15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18	→	MEASUREMENT REPORT	
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21			SS waits for 8 seconds to confirm that there is no
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)

31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
33	←	SIB12 modified	Traffic volume measurements and reporting is assigned to UEs
34	←	RADIO BEARER RECONFIGURATION	
35	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 33).
36	→	MEASUREMENT REPORT	
37	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 6.1 ~~9~~ of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 1)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

The order in which the RBs are reported is not checked.

Information Element	Value/remark
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 34)

Use the same message type found in TS 34.108 clause 9 with condition set to A5.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in TS 34.108 clause 9 with condition set to A4.

MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

MEASUREMENT REPORT (Step 13)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

MEASUREMENT CONTROL (Step 14)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

MEASUREMENT REPORT (Step 18)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

System Information Block type 12 (Step 33) (FDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

System Information Block type 12 (Step 33) (TDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	FALSE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

MEASUREMENT REPORT (Step 36)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 37)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.19.5 Test Requirement

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050162
Agenda 8.8.3

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1081** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF high priority (WI-12) RRC test cases
Source:	⌘	Motorola and MCC 160
Work item code:	⌘	TEI
Date:	⌘	18-Jan-05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In specific message contents for System Information Blocks, clause number in 34.108 of Default messages is missing
Summary of change:	⌘	Added 'clause 6.1'
Consequences if not approved:	⌘	Specification remains incomplete

Clauses affected:	⌘	8.1.1.9 & 8.1.1.10
Other specs affected:	⌘	Other core specifications ⌘ Test specifications O&M Specifications
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs. No impact on TTCN

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.1.1.9 Paging for Connection in idle mode (multiple paging records)

8.1.1.9.1 Definition

8.1.1.9.2 Conformance requirement

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a CN identity:

2> compare the IE "UE identity" with all of its allocated CN UE identities:

2> if one match is found:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers.

1> otherwise:

2> ignore that paging record.

:

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to the cause for establishment indicated by upper layers;

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

1> if the RRC connection establishment procedure was not successful:

2> indicate failure to establish the signalling connection to upper layers and end the procedure.

1> when the RRC connection establishment procedure is completed successfully:

2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL_PCH or URA_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

The UE shall, in the INITIAL DIRECT TRANSFER message:

1> set the IE "NAS message" as received from upper layers; and

1> set the IE "CN domain identity" as indicated by the upper layers; and

1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;

2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;

3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and

1> include the calculated START value for that CN domain in the IE "START".

In CELL_FACH state, the UE shall:

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;

1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:

2> confirm the establishment of a signalling connection to upper layers; and

2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED_SIGNALLING_CONNECTIONS.

1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.2 and 8.1.8, 3GPP TS 25.211 clause 5.3.3.10 (FDD), 3GPP TS25.221 (TDD), 3GPP TS 25.304 clause 8.

8.1.1.9.3 Test purpose

1) For the CS domain

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which contains multiple paging records and includes IE "UE identity"(in IE "Paging Record") set to the IMSI of the UE, and responds with a correct INITIAL DIRECT TRANSFER message.

2) For the PS domain

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which contains multiple paging records and includes IE "UE identity"(in IE "Paging Record") set to the P-TMSI allocated by SS at initial attach and responds with a correct INITIAL DIRECT TRANSFER message.

8.1.1.9.4 Method of test

Initial Condition

System Simulator: 1 cell. PICH is configured with “Number of PI per frame” set to 36.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 with a CN UE identity (set to IMSI in the CS domain), depending on the CN domain(s) supported by the UE.

Test Procedure

SS transmits SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages, depending on the CN type supported by the UE. The SS also transmits SYSTEM INFORMATION BLOCK TYPE 5 messages. The SS transmits a PAGING TYPE 1 message, which includes an unmatched CN UE identity for idle mode, and an unmatched UTRAN UE identity for connected mode. The UE shall not change its state. The SS transmits a PAGING TYPE 1 message, which includes two unmatched identities and a matched CN UE identity for the UE in the idle state. During transmission of PAGING TYPE 1 messages, SS selects the correct paging indicator on the PICH in order to allow the UE to respond to paging. Then the UE transmits an RRC CONNECTION REQUEST to the SS, the SS transmits an RRC CONNECTION SETUP to the UE. When the UE receives this message, the UE establishes an RRC connection and transmits an RRC CONNECTION SETUP COMPLETE message and an INITIAL DIRECT TRANSFER message on the uplink DCCH.

NOTE: For UEs supporting GSM-MAP CN type only, SYSTEM INFORMATION TYPE 1 messages are to be sent by SS in this test case. On the other hand, SS transmits SYSTEM INFORMATION TYPE 13 messages if the UE under test supports only ANSI-41 CN type.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 13 or SYSTEM INFORMATION BLOCK TYPE 1	See specific message contents.
2	←		SYSTEM INFORMATION BLOCK TYPE 5	See specific message contents.
3	←		PAGING TYPE 1	The SS transmits the message, which includes only unmatched identities, and the UE does not change its state.
4	←		PAGING TYPE 1	The SS transmits the message, which includes a matched identity.
5	→		RRC CONNECTION REQUEST	
6	←		RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish an RRC connection.
7	→		RRC CONNECTION SETUP COMPLETE	
8	→		INITIAL DIRECT TRANSFER	

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 (Step 1) – for UEs supporting GSM-MAP core networks

Use the default message type found in clause 6.1 of TS 34.108, except for the following.

Information Element	Value/remark
CN domain system information - CN domain identity - CN domain specific DRX cycle length coefficient - CN domain identity - CN domain specific DRX cycle length coefficient	 PS 8 CS 6

SYSTEM INFORMATION TYPE 13 (Step 1) – for UEs supporting ANSI-41 core networks

Use the default message type found in clause 6.1 of TS 34.108, clause 6.1.

SYSTEM INFORMATION BLOCK TYPE 5 (Step 2)

Use the default message type found in clause 6.1 of TS 34.108, except for the following.

Information Element	Value/remark
PICH Info - Number of PI per frame	 36

PAGING TYPE 1 (Step 3)

Information Element	Value/remark
Message Type Paging record list - Paging record 1 - CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE Identity - IMSI - Paging record 2	 CN identity Terminating Call with one of the supported services A Registered Domain (PS Domain or CS Domain) IMSI Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an arbitrary SRNC identity.
- S-RNTI	Set to an arbitrary 20-bit string.
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

PAGING TYPE 1 (Step 4)

For speech in CS:

Information Element	Value/remark
Message Type Paging record list - Paging record 1 - CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE Identity - IMSI - Paging record 2	 CN identity Terminating Call with one of the supported services A Registered Domain (PS Domain or CS Domain) IMSI Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an arbitrary SRNC identity.
- S-RNTI	Set to an arbitrary 20-bit string.
- CN originated page to connected mode UE	Not Present
- Paging record 3 - CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE identity - IMSI (GSM-MAP) BCCH modification info	 CN identity Terminating Conversational Call CS domain Set to the same octet string as in the IMSI stored in the USIM card Not Present

For packet in PS:

Information Element	Value/remark
Message Type Paging record list - Paging record 1 - CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE Identity - IMSI - Paging record 2	 CN identity Terminating Call with one of the supported services A Registered Domain (PS Domain or CS Domain) IMSI Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an arbitrary SRNC identity.
- S-RNTI	Set to an arbitrary 20-bit string.
- CN originated page to connected mode UE	Not Present
- Paging record 3 - CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE identity - P-TMSI BCCH modification info	 CN identity Terminating Interactive Call PS domain Use P-TMSI allocated by SS at initial attach. Not Present

RRC CONNECTION REQUEST (Step 5)

Information Element	Value/remark
Message type	
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered P-TMSI depending upon CN domain concerned.
Establishment Cause	Check to see if it is set to the same value as "Paging Cause" IE in the PAGING TYPE 1 message transmitted on step 3.
Protocol Error Indicator	Check to see if it is set to FALSE
Measured results on RACH	Not checked.

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

Information Element	Value/remark
Message Type	
Integrity check info	Not present
CN domain identity	CS domain or PS domain (as specified by the SS in the PAGING TYPE 1 message of Step 4)
Intra Domain NAS Node Selector	
- CHOICE version	R99
-- CHOICE CN type	GSM-MAP
--- CHOICE Routing basis	IMSI (response to IMSI paging) in CS domain) P-TMSI (response to P-TMSI paging in PS Domain)
---- Routing parameter	If the IE "CN domain identity" is equal to "CS domain", bit string (10) consisting of DecimalToBinary [(IMSI div 10) mod 1000]. The first/ leftmost bit of the bit string contains the most significant bit of the result. If the IE "CN domain identity" is equal to "PS domain": The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant. The "Routing parameter" is set to bits b14 through b23 of the TMSI/ PTMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI.
--- Entered parameter	Not checked
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
Message Type	
Integrity check info	Not present
CN domain identity	CS domain or PS domain (as specified by the SS in the PAGING TYPE 1 message of Step 3)
Intra Domain NAS Node Selector	
- CHOICE version	ANSI-41 : Bitstring(14), all bits set to 0
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

8.1.1.9.5 Test requirement

After step 3 the UE shall not respond to the PAGING TYPE 1 message sent in step 3.

After step 4 the UE shall transmit an RRC CONNECTION REQUEST message on the uplink CCCH.

After step 6 the UE shall have an RRC connection based on dedicated physical channel resources and transmit an RRC CONNECTION SETUP COMPLETE message and an INITIAL DIRECT TRANSFER message on the uplink DCCH.

8.1.1.10 Paging for Connection in connected mode (URA_PCH, multiple paging records)

8.1.1.10.1 Definition

8.1.1.10.2 Conformance requirement

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

:

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or

- includes the IE "New U-RNTI":

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

Reference

3GPP TS 25.331 clause 8.1.2, 8.3.1.7.

8.1.1.10.3 Test purpose

To confirm that the UE enters the CELL_FACH state after it receives a PAGING TYPE 1 message in which the IE "Used paging identity" is set to "UTRAN identity", and the UE takes the U-RNTI value assigned to it in the IE "U-RNTI".

8.1.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell. PICH is configured with “Number of PI per frame” set to 72.

UE: URA_PCH state (state 6-13) as specified in clause 7.4 of TS 34.108, with a valid U-RNTI assigned by the SS.

Test Procedure

The SS transmits SYSTEM INFORMATION BLOCK TYPE 6 messages with a modified PCH configuration. The SS then transmits a PAGING TYPE 1 message, which includes a matched IMSI, but the UE does not respond since it is in connected mode. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI but in a paging occasion not accrding to the DRX cycle of the UE. The UE does not reply. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI in a correct paging occasion. Then the UE listens to it and enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in respond to the paging. The SS sends the UE back to URA_PCH state using CELL UPDATE CONFIRM and also modifies the UTRAN DRX cycle length for the UE. The SS then transmits a PAGING TYPE 1 message using the new paging occasions. The UE replies to this page.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 6	See specific message contents
2	←		PAGING TYPE 1	The SS transmits the message that includes a matched CN UE identity, but the UE does not respond.
3	←		PAGING TYPE 1	The SS transmits the message that includes a matched UTRAN UE identity but in a paging occasion not according to the DRX cycle of the UE.
4	←		PAGING TYPE 1	The SS transmits the message that includes a matched UTRAN UE identity in the correct paging occasion.
5	→		CELL UPDATE	The UE enters the CELL_FACH state.
6	←		CELL UPDATE CONFIRM	See message content.
7	→		UTRAN MOBILITY INFORMATION CONFIRM	After transmitting this message, the UE returns to URA_PCH state and changes its UTRAN DRX cycle.
8	←		PAGING TYPE 1	The SS transmits the message that includes a matched UTRAN UE identity, using a paging occasion which is included in the new DRX cycle, but not in the old DRX cycle.
9	→		CELL UPDATE	The UE enters the CELL_FACH state.
10	←		CELL UPDATE CONFIRM	See message content.
11	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 6 (Step 1)

Use the default message type found in clause 6.1 of TS 34.108, except for the following.

Information Element	Value/remark
PICH Info - Number of PI per frame	72

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	
- Paging record 1	
- CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	A Registered Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI stored in the USIM card.
- Paging record 2	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an unused SRNC identity which is different from the SRNC identity assigned.
- S-RNTI	Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

PAGING TYPE 1 (Steps 3, 4 and 8)

Information Element	Value/remark
Message Type	
Paging record list	
- Paging record 1	
- CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	A Registered Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.
- Paging record 2	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an unused SRNC identity which is different from the SRNC identity assigned.
- S-RNTI	Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.
- CN originated page to connected mode UE	Not Present
- Paging record 3	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to the previously assigned SRNC identity
- S-RNTI	Set to previously assigned S-RNTI
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE CONFIRM (Step 6)

Use the message sub-type in default message content defined in [9] (TS 34.108) Clause 9, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'
RRC State Indicator	URA_PCH
UTRAN DRX Cycle length coefficient	4

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 10)

Use the message sub-type in default message content defined in [9] (TS 34.108) Clause 9, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

8.1.1.10.5 Test requirement

After steps 2 and 3 the UE shall not respond to the paging.

After steps 4 and 8 the UE shall enter the CELL FACH state, and transmit CELL UPDATE message to initiate the cell updating procedure with the cell update cause set to "paging response".

After steps 6 and 10 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050163
Agenda 8.8.11

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1082** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF high priority (WI-14) RRC test cases
Source:	⌘	Motorola and MCC 160
Work item code:	⌘	HSDPA
Date:	⌘	18-Jan-05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Reference for Default message contents for System Information Blocks is specified as 'clause 9 of 34.108'. It should be 'clause 6.1'
Summary of change:	⌘	Reference to clause 9 of 34.108 replaced with clause 6.1
Consequences if not approved:	⌘	Specification remains incorrect

Clauses affected:	⌘	8.2.1.32 & 8.2.2.37

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	Affects Rel5 and later releases. No impact on TTCN

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.2.1.32 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Success (start of HS-DSCH reception with frequency modification)

8.2.1.32.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.32.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER SETUPmessage, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

…

If the IE "New H-RNTI" is included, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b.

2> if the value of the IE "MAC-hs reset indicator" is TRUE:

3> reset the MAC-hs entity.

…

If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 applied on the received message, the UE shall:

1> if the IE "New H-RNTI" is included:

2> perform the actions as specified in subclause 8.6.3.1b.

1> if the IE "HS-SCCH Info" is included:

2> act as specified in subclause 8.6.6.33.

1> if the IE "Measurement Feedback Info" is included:

2> act as specified in subclause 8.6.6.34.

1> For FDD, if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and

1> For FDD, if the UE has received IE "Uplink DPCH Power Control Info" and stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor; and

1> For FDD, if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration;

2> set the variable HS_DSCH_RECEPTION to TRUE;

2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:

3> as stated in subclause 8.6.3.1b for the IE "H-RNTI";

3> in subclause 8.6.6.33 for the IE "HS-SCCH Info"; and

3> in subclause 8.6.6.34 for the IE "Measurement Feedback Info".

…

If the IE "HS-SCCH Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

…

If the IE "Measurement Feedback Info" is included, the UE shall:

1> store the received configuration.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.2.2, 8,6,3,1, 8.6.3.1b, 8.6.5.6, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.2.1.32.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to HS-DSCH according to the received RADIO BEARER SETUP message.

8.2.1.32.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

SYSTEM INFORMATION BLOCK TYPE 3 (see specific message contents)

UE: PS_DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

Table 8.2.1.32

Parameter	**Unit**	**Cell 1**		**Cell 6**	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-55	-55	Off	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	Off	-55

Table 8.2.1.32 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of cell 1 and only signalling radio bearers have been established. SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.32. The SS switches its downlink transmission power settings to columns "T1".

The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio access bearer mapped to HS-DSCH using a 384 kbps and uplink DCH restricted to 64 kbps. After the UE receives this message, it configures them and establishes a radio access bearer in cell 6. Finally the

UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	SS receives this message from Cell 6.
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block Type 3 (FDD)

Use the default system information block with the same type specified in clause ~~9~~ 6.1 TS 34.108, with the following exceptions:

Information Element	Value/remark
- Sintersearch	10dB

RADIO BEARER SETUP (Step 1)

Use the same message as specified in clause 9 TS 34.108 for “Packet to CELL_DCH / HS-DSCH from CELL_FACH in PS", with the following exceptions:

Information Element	Value/remark
RAB information for setup - PDCP info - Transmission RLC discard - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Timer_poll_prohibit - Timer_poll - Poll_Windows - Receiving window size - Downlink RLC status info - Timer_status_prohibit	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9, with the following exceptions; Not present 10 256 1000 12 50 400 80 2047 50
UL Transport channel information for all transport channels - CHOICE Gain Factors - Gain factorβc - Gain factorβd	 Computed Gain Factors (The last TFC is set to Signalled Gain Factors) 10 (below 64 kbps) 8 (higher than 64 kbps) 15 (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.
Frequency info - CHOICE mode - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 FDD Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Maximum allowed UL TX power	24dBm
CHOICE channel requirement - Δ_{ACK} - Δ_{NACK}	 6 6
Downlink HS-PDSCH Information - Measurement Feedback Info - POhsdsch - CQI Feedback cycle, k - Δ_{CQI}	 9dB 10ms 3
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 350

8.2.1.32.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

8.2.2.37 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_FACH and from CELL_FACH to CELL_DCH: Success (start and stop of HS-DSCH reception)

8.2.2.37.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.37.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> clear any stored IE “Downlink HS-PDSCH information”;

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25

8.2.2.37.3 Test purpose

To confirm that the UE transits to CELL_FACH state from CELL_DCH state and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

To confirm that the UE transits to CELL_DCH state from CELL_FACH state and starts receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.37.4 Method of test

Initial Condition

System Simulator: 1 cell

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS_DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_FACH state and SS establishes a radio bearer mapped on HS-DSCH by transmitting a RADIO BEARER SETUP message. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it stops HS-DSCH reception, moves to CELL_FACH state and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Then, SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it moves to CELL_DCH state, resumes HS-DSCH reception and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	←		ACTIVATE PDP CONTEXT ACCEPT	
4	←		RADIO BEARER RECONFIGURATION	Stop of HS-DSCH reception and transit to CELL_FACH state,
5	→		RADIO BEARER RECONFIGURATION COMPLETE	
6	←		RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception and transit to CELL_DCH state
7	→		RADIO BEARER RECONFIGURATION COMPLETE	
8	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause ~~9~~ 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

RADIO BEARER SETUP (Step 1)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_FACH in PS" in 34.108.

RADIO BEARER RECONFIGURATION (Step 4)

Use the same message as specified for "Packet to CELL_FACH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE

- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	23
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE

- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1

RADIO BEARER RECONFIGURATION (Step 6)

Use the same message as specified for "Packet to CELL_DCH from CELL_FACH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'1010 1010 1010 1010'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	23
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
- RB stop/continue	Not Present
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	1
- Measurement Feedback Info	
- CHOICE mode	FDD
- POhsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	-3 dB
- CHOICE mode	FDD (no data)
Downlink information for each radio link	
- Serving HS-DSCH radio link indicator	TRUE

8.2.2.37.5 Test requirements

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 6, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

<< END OF MODIFIED SECTION >>

3GPP TSG-T WG1 Meeting #26
Bangalore, India , January 31 – February 04, 2005

Tdoc ⌘T1-050168

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1083** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of 3rd party transfer A-GPS test cases
Source:	⌘	Qualcomm
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ LCS MO-LR procedure for transfer of the location estimate to a 3rd party LCS client requires a FACILITY message as confirmation that the position estimate was transferred to the requested LCS client.

Test cases 17.2.3.6 and 17.2.3.7 specify the content of this FACILITY message and currently indicate an empty `LCS-MOLRRes`.

TS 24.080 specifies the content of the `LCS-MOLRRes` as follows:

```
LCS-MOLRRes::= SEQUENCE {
    locationEstimate        [0] Ext-GeographicalInformation     OPTIONAL,
    decipheringKeys         [1] DecipheringKeys                 OPTIONAL,
    ...,
    add-LocationEstimate    [2] Add-GeographicalInformation
    OPTIONAL}
-- Parameters locationEstimate or add-LocationEstimate (one but not both)
-- shall be included if and only if the
-- molr-Type in LocationRequestArg was set to value locationEstimate.
```

Also in case of MO-LR request for transfer of the location estimate to a 3rd party LCS client, the `molr-Type` parameter in the REGISTER message is set to `locationEstimate`. Hence, the FACILITY message shall contain the `locationEstimate` in the `LCS-MOLRRes` as confirmation that the position estimate was transferred to the requested LCS client.

Summary of change:	⌘	The content of the FACILITY message for Transfer to third party test cases has been corrected to return parameter `locationEstimate` in the FACILITY message. Miscellaneous editorial Corrections: 1) Headings for sections 17.2.3.5 and 17.2.3.6 appear in a single line. 2) Gridlines added to Expected Sequence Diagram and Font Name/Size corrected. 3) Last sentence in 17.2.3.7.5 changed from style “Heading” to style “Normal”.
Consequences if not approved:	⌘	Errors persist in test cases.

Clauses affected:	⌘	17.2.3.5, 17.2.3.6, 17.2.3.7			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects REL-5, REL-4 and R99.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.2.3.5 Void

17.2.3.6 LCS Mobile originated location request/ UE-Based GPS/ Transfer to third party/ Success

[…]

17.2.3.6.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Based Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type “locationEstimate”. The IE “LCSClientExternalID” is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using MEASUREMENT CONTROL messages, including assistance data.

The UE sends a MEASUREMENT REPORT message containing a location estimate.

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

[**** Editor’s note: Only format of the table below has been changed: Grid lines have been included and Font name/size has been corrected. ****]

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE “Establishment cause” in the received RRC

			CONNECTION REQUEST message is set to “Originated High Priority Signalling”.
2	->	CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service”
3	<-	AUTHENTICATION REQUEST	
4	->	AUTHENTICATION RESPONSE	
5	SS		The SS starts ciphering and integrity protection.
6	->	REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE “MOLR-Type” is set to “locationEstimate”. The IE “LCSClientExternalID” is set to a valid ID for an external LCS client.
7	<-	MEASUREMENT CONTROL	
8	<-	MEASUREMENT CONTROL	
9	<-	MEASUREMENT CONTROL	
10	->	MEASUREMENT REPORT	
11	<-	FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
12	->	RELEASE COMPLETE	The UE terminates the dialogue
13	SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString Value 1 or above

[…]

FACILITY (Step 11)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate~~EMPTY~~

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.6.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate" and the IE "LCSClientExternalID" set to the ID of a valid external LCS client.

After step 9, the UE shall respond with a MEASUREMENT REPORT message containing the IE "Position Estimate".

After step 12, the UE shall send a RELEASE COMPLETE message.

17.2.3.7 LCS Mobile originated location request/ UE-Assisted GPS/ Transfer to third party/ Success

[…]

17.2.3.7.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state "PMM idle" with valid P-TMSI

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type "locationEstimate". The IE "LCSClientExternalID" is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.2. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message containing IE "UE positioning GPS measured results".

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

[**** Editor's note: Only format of the table below has been changed: Grid lines have been included and Font name/size has been corrected. ****]

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE "MOLR-Type" is set to "locationEstimate". The IE "LCSClientExternalID" is set to a valid ID for an external LCS client.
7	<-		MEASUREMENT CONTROL	
8	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
8a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 8, SS provides the requested data in one or

			more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.
8b	->	MEASUREMENT REPORT	If UE requested additional assistance data in step 8, this message contains the IE "UE positioning GPS measured results".
9	<-	FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
10	->	RELEASE COMPLETE	The UE terminates the dialogue
11	SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility SS version indicator	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString Value 1 or above

[…]

FACILITY (Step 9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate~~EMPTY~~

RELEASE COMPLETE (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

17.2.3.7.5 Test requirements

After step 5 the UE shall transmit a REGISTER message with an LCS MO-LR request with the IE "MOLR-Type" set to "locationEstimate" and the IE "LCSClientExternalID" set to the ID of a valid external LCS client.

After step 7, the UE shall respond with a MEASUREMENT REPORT message containing the IE "UE positioning GPS measured results".

[*****Editor's note: Only format of the following two lines have been changed (both appear in headings style****)

After step 9, the UE shall send a RELEASE COMPLETE message.

17.2.3.8 LCS Mobile originated location request/ UE-Based or UE-Assisted GPS/ Assistance data request/ Failure

17.2.3.8.1 Definition

This test case applies to all UEs supporting UE-based or UE-assisted GPS Location Service capabilities and providing a method to trigger an MO-LR request for assistance data.

3GPP TSG-T WG1 Meeting #26
Bangalore, India , January 31 – February 04, 2005

Tdoc ⌘T1-050170

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1084** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of UE-assisted A-GPS test cases
Source:	⌘	Qualcomm
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	As agreed at T1#25, in the test cases for UE-assisted A-GPS the UE is allowed to request additional assistance data during the test. This option has not been included in all UE-assisted A-GPS test cases yet.
Summary of change:	⌘	1) The request for additional assistance data is included in the expected sequence diagram for test cases 17.2.2.3, 17.2.2.4, 17.2.3.4, and 17.2.4.4. 2) Test cases 17.2.3.7, 17.2.4.8, and 17.2.4.9 are corrected so that the additional assistance data are provided using “Modify” command (instead of “Setup”). 3) Various references to sections 17.2.1.3.x are corrected.
Consequences if not approved:	⌘	Inconsistency between various UE-assisted A-GPS tests persist.

Clauses affected:	⌘	17.2.2.3, 17.2.2.4, 17.2.3.4, 17.2.3.7, 17.2.4.4, 17.2.4.8, 17.2.4.9

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘ Affects REL-5, REL-4 and R99.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.2.2.3 LCS Network induced location request/ UE-Assisted GPS/ Emergency call/ With USIM

[….]

17.2.2.3.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

- the UE is in state "MM idle" with valid TMSI and CKSN.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Assisted Network Assisted GPS

Test Procedure

The UE is made to initiate an emergency call.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using ~~MEASUREMENT CONTROL procedure~~ a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.~~.~~

The UE then performs positioning measurements and responds with the RRC message MEASUREMENT REPORT.

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. Number shall be one programmed in test USIM EF_{ECC} (Emergency Call Codes), ref. 34.108 clause 8.3.2.21.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE assisted positioning measurement
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment".
4	<--		AUTHENTICATION REQUEST	IE Authentication Parameter AUTN shall be present in the message.
5	-->		AUTHENTICATION RESPONSE	SRES specifies correct value.
6	SS			SS starts security procedure.
7	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
8	<--		CALL PROCEEDING	
9	<--		ALERTING	
10	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
11	<--		CONNECT	
12	-->		CONNECT ACKNOWLEDGE	
13	UE			The DTCH is through connected in both directions.
14	<-		MEASUREMENT CONTROL	
15	-->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
15a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 15, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
15b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 15, this message contains the IE “UE positioning GPS measured results”.
16	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 14):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	~~FALSE~~TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 15 (Option 1) or 15b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 15 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 15a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

17.2.2.4 LCS Network induced location request/ UE-Assisted GPS/ Emergency call/ Without USIM

[…]

17.2.2.4.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - the UE shall be in a state where no assistance data is stored in the UE.
  - the UE is in state "MM idle" with no IMSI and no USIM inserted.

Related PICS/PIXIT Statements

- Emergency speech call yes/no
- UE Assisted Network Assisted GPS

Test procedure

The UE is made to initiate an emergency call. The call is established without authentication and security.

After the call has been through-connected in both directions, the SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

~~The assistance data is as specified in section 17.2.1.3.3 (Adequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.~~

The UE sends a MEASUREMENT REPORT message including the IE "UE positioning GPS measured results".

Finally the SS clears the call.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The "emergency number" is entered. One of the following emergency numbers shall be used: 000, 08, 112, 110, 118, 119, 911 or 999.
2	-->			UE establishes RRC procedure for emergency call. Establishment cause: Emergency Call SS checks that the UE capability includes A-GPS UE-assisted positioning measurement.
3	-->		CM SERVICE REQUEST	The CM service type IE indicates "emergency call establishment". The mobile identity IE specifies the IMEI of the UE. The cipher key sequence number IE indicates "no key is available".
4	<--		CM SERVICE ACCEPT	
5	-->		EMERGENCY SETUP	If the Bearer capability IE is not included the default UMTS AMR speech version shall be assumed.
6	<--		CALL PROCEEDING	
7	<--		ALERTING	
8	<--			SS sets up the radio bearer with the rate indicated by the EMERGENCY SETUP message.
9	<--		CONNECT	
10	-->		CONNECT ACKNOWLEDGE	
11	UE			The DTCH is through connected in both directions.
12	<-		MEASUREMENT CONTROL	Assistance data as specified in section 17.2.1.3.3.
13	-->		MEASUREMENT REPORT	UE reports the IE “UE positioning GPS measured results” (Option 1) or requests additional assistance data (Option 2).
13a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 13, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
13b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 13, this message contains the IE “UE positioning GPS measured results”.
14	<--		DISCONNECT	SS disconnects the call and associated radio bearer.

Specific Message Contents

MEASUREMENT CONTROL (Step 12):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	~~FALSE~~TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in section 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 13 (Option 1) or 13b (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	UE positioning measured results
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 13 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 13a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

17.2.3.4 LCS Mobile originated location request/ UE-Assisted GPS/ Position Estimate/ Success

[…]

17.2.3.4.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE shall begin the test with no GPS assistance data stored.
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS
- Method of clearing stored GPS assistance data
- Method of triggering an MO-LR request for a position estimate.

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes an MO-LR request through the Facility IE in a REGISTER message. The MO-LR request if of type “locationEstimate”.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE “Error reason” set to “Assistance Data Missing”. If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE then initiates periodic measurement reporting. After receiving the MEASUREMENT REPORT message, the SS responds with a FACILITY message containing an MO-LR result. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5		SS		The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE "MOLR-Type" is set to "locationEstimate".
7	<-		MEASUREMENT CONTROL	
8	->		MEASUREMENT REPORT	UE reports the IE "UE positioning GPS measured results" (Option 1) or requests additional assistance data (Option 2).
8a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 8, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
8b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 8, this message contains the IE "UE positioning GPS measured results".
9	<-		FACILITY	LCS MO-LR result message containing location estimate
10	->		RELEASE COMPLETE	The UE terminates the dialogue
11		SS		The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-MOLR LCS-MOLRArg molr-Type -> locationEstimate Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present

CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	~~FALSE~~TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 8 (Option 1) or 8b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 8 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 8a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

FACILITY (Step 9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	FACILITY (0x11 1010)
Facility	Return result = LCS-MOLR LCS-MOLRRes -> locationEstimate

RELEASE COMPLETE (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)

17.2.3.7 LCS Mobile originated location request/ UE-Assisted GPS/ Transfer to third party/ Success

[…]

17.2.3.7.4 Method of Test

Initial Conditions

- System Simulator:
  - 1 cell, default parameters.
  - Satellites: As specified in 17.2.1.2
- User Equipment:
  - The UE is in state "MM idle" with valid TMSI and CKSN.
  - The UE is in state “PMM idle” with valid P-TMSI

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS
- Method of triggering an MO-LR request for transfer to 3rd party

Test Procedure

The UE invokes call independent supplementary service through a CM SERVICE REQUEST. The SS initiates authentication and ciphering.

The UE invokes a MO-LR request through the Facility IE in a REGISTER message. The MO-LR request is of type “locationEstimate”. The IE “LCSClientExternalID” is set to the ID of a valid external LCS client.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3~~2~~. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE “Error reason” set to “Assistance Data Missing”. If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message containing IE “UE positioning GPS measured results”.

The SS sends a FACILITY message confirming that the transfer to the external client succeeded. When UE receives the FACILITY message, it clears the transaction by sending a RELEASE COMPLETE message.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1	->			The UE establishes an RRC connection for location service. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originated High Priority Signalling".
2	->		CM SERVICE REQUEST	The CM service type IE indicates "call independent supplementary service"
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	SS			The SS starts ciphering and integrity protection.
6	->		REGISTER	Call Independent SS containing Facility IE with an LCS MO-LR request. The IE "MOLR-Type" is set to "locationEstimate". The IE "LCSClientExternalID" is set to a valid ID for an external LCS client.
7	<-		MEASUREMENT CONTROL	
8	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
8a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 8, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
8b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 8, this message contains the IE "UE positioning GPS measured results".
9	<-		FACILITY	LCS MO-LR result message as confirmation that the position estimate was transferred to the requested LCS client.
10	->		RELEASE COMPLETE	The UE terminates the dialogue
11	SS			The SS releases the RRC connection and the test case ends

Specific Message Contents

REGISTER (Step 6)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-MOLR LCS-MOLRArg molr-Type ->locationEstimate lcsClientExternalID -> ISDN-AddressString
SS version indicator	Value 1 or above

MEASUREMENT CONTROL (Step 7):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 8 (Option 1) or ~~and~~ 8b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 8 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 8a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify~~Setup~~
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified ~~for "Adequate assistance data for UE-assisted A-GPS"~~ in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

FACILITY (Step 9)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	FACILITY (0x11 1010) Return result = LCS-MOLR LCS-MOLRRes -> EMPTY

RELEASE COMPLETE (Step 10)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	RELEASE COMPLETE (0x10 1010)

17.2.4.4 LCS Mobile terminated location request/ UE-Assisted GPS/ Success

[…]

17.2.4.4.4 Method of Test

Initial Conditions

System Simulator (SS):

1 cell, default parameters

Satellites: As specified in 17.2.1.2

UE:

State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE supporting CS domain services
- UE Assisted Network Assisted GPS

Test Procedure

The SS sends an SS REGISTER message containing a Facility IE containing a DTAP LCS Location Notification Invoke message set to notifyLocationAllowed. The LCS Client Name contained in the USSD text string of the lcs-LocationNotification shall be displayed. The UE then responds with a RELEASE COMPLETE message containing a LocationNotification return to terminate the dialogue.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message. The assistance data is as described in section 17.2.1.3.3 (Adequate assistance data for UE-assisted A-GPS). The MEASUREMENT CONTROL message orders periodical reporting.

The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE “Error reason” set to “Assistance Data Missing”. If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE then initiates periodic measurement reporting and sends a MEASUREMENT REPORT message including the IE “UE positioning GPS measured results”.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
2	UE			The UE displays information about LCS client
3	->		RELEASE COMPLETE	The UE terminates the dialogue
4	<-		MEASUREMENT CONTROL	Periodical reporting is configured.
5	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
5a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 5, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
5b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 5, this message contains the IE "UE positioning GPS measured results".

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = lcs-LocationNotification LocationNotificationArg notificationType -> notifyLocationAllowed, locationType -> current Location , lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 3)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = lcs-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 4):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	~~FALSE~~TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5 (Option 1) or 5b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 5 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 5a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

17.2.4.8 LCS Mobile terminated location request/ UE-Assisted GPS/ Privacy Verification/ Location Allowed if No Response

[…]

17.2.4.8.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3~~2~~. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationAllowed.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3~~2~~. The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE then sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	Assistance data set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
7	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
7a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 7, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
7b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 7, this message contains the IE “UE positioning GPS measured results”.
8	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
9	SS			SS starts timer T(LCSN) set to 20 seconds
10	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
11	UE			The user denies the location request within < 20 seconds
12	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
13	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationAllowedIfNoResponse
14	SS			SS starts timer T(LCSN) set to 20 seconds
15	UE			The UE notifies the user of the location request and indicates to the user that location will be allowed in the absence of a response
16	UE			The user does not reply
17	SS			SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
18	<-		RELEASE COMPLETE	SS terminates the dialogue
19	<-		MEASUREMENT CONTROL	Assistance data set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.5
20	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).

20a	<-	MEASUREMENT CONTROL	If UE requested additional assistance data in step 20, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
20b	->	MEASUREMENT REPORT	If UE requested additional assistance data in step 20, this message contains the IE “UE positioning GPS measured results”.
21	SS		SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 7 (Option 1) or~~and~~ 7b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 7 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 7a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Modify~~Setup~~
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified ~~for "Adequate assistance data for UE-assisted A-GPS"~~ in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

REGISTER (Step 8)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step 13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 18)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

MEASUREMENT CONTROL (Step 19):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 20 (Option 1) or~~and~~ 20b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 20 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 20a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	~~Setup~~Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified ~~for "Adequate assistance data for UE-assisted A-GPS"~~ in 17.2.1.3.5
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

17.2.4.9 LCS Mobile terminated location request/ UE-Assisted GPS/ Privacy Verification/ Location Not Allowed if No Response

[…]

17.2.4.9.4 Method of Test

Initial Conditions

System Simulator (SS):

- 1 cell, default parameters
- Satellites: As specified in 17.2.1.2

UE:

- State CS-DCCH+DTCH (state 6-9) as specified in clause 7.4 of TS 34.108

Related PICS/PIXIT Statements

- UE Assisted Network Assisted GPS

Test Procedure

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The LCS Client Name contained in the USSD text string of the lcs-LocationNotification should be displayed with the option to accept or deny the request and an indication that location will be allowed if no user response is received.

The user accepts the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionGranted.

The SS orders an A-GPS positioning measurement using a MEASUREMENT CONTROL message, including assistance data as specified in section 17.2.1.3.3.~~2.~~ The UE may request additional assistance data by sending a MEASUREMENT REPORT message containing a positioning error indication with the IE "Error reason" set to "Assistance Data Missing". If the UE requests additional assistance data, the SS provides the requested assistance data in one or more MEASUREMENT CONTROL messages.

The UE sends a MEASUREMENT REPORT message including IE "UE positioning GPS measured results".

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user denies the location request. The UE responds with a RELEASE COMPLETE message containing a LocationNotification return result with verificationResponse set to permissionDenied.

The SS sends a REGISTER message containing a Facility IE containing a LCS Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse.

The user ignores the location request by taking no action. If the timer expires in the SS before any response from the UE is received, the SS interprets this by applying the default treatment LocationNotAllowed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
2	SS			SS starts timer T(LCSN) set to 20 seconds
3	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
4	UE			The user accepts the location request within < 20 seconds
5	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionGranted
6	<-		MEASUREMENT CONTROL	
7	->		MEASUREMENT REPORT	UE reports positioning measurement results (Option 1) or requests additional assistance data (Option 2).
7a	<-		MEASUREMENT CONTROL	If UE requested additional assistance data in step 7, SS provides the requested data in one or more MEASUREMENT CONTROL messages as specified in section 17.2.1.3.5.
7b	->		MEASUREMENT REPORT	If UE requested additional assistance data in step 7, this message contains the IE “UE positioning GPS measured results”.
8	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
9	SS			SS starts timer T(LCSN) set to 20 seconds
10	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
11	UE			The user denies the location request within < 20 seconds
12	->		RELEASE COMPLETE	Containing a LocationNotification return result with verificationResponse set to permissionDenied
13	<-		REGISTER	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyAndVerify-LocationNotAllowedIfNoResponse
14	SS			SS starts timer T(LCSN) set to 20 seconds
15	UE			The UE notifies the user of the location request and indicates to the user that location will be not allowed in the absence of a response
16	UE			The user does not reply
17	SS			SS waits for 20 seconds (until T(LCSN) expires) to verify that the UE does not send a RELEASE COMPLETE message.
18	<-		RELEASE COMPLETE	SS terminates the dialogue
19	SS			SS releases the connection and the test case ends

Specific Message Contents

REGISTER (Step 1)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	REGISTER (0x11 1011)
Facility	Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 5)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier	
Message type	RELEASE COMPLETE (0x10 1010)
Facility	Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionGranted

MEASUREMENT CONTROL (Step 6):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	TRUE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified for “Adequate assistance data for UE-assisted A-GPS” in 17.2.1.3.3
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Steps 7 (Option 1) or~~and~~ 7b (Option 2))

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Present
- UE positioning error	Not present
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT REPORT (Step 7 (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measured Results	
- CHOICE *Measurement*	
- UE positioning measured results	
- UE positioning OTDOA measured results	Not present
- UE positioning position estimate info	Not present
- UE positioning GPS measured results	Not present
- UE positioning error	
- Error reason	Assistance Data Missing
- GPS additional assistance data request	
- Almanac	Not checked
- UTC model	Not checked
- Ionospheric model	Not checked
- Navigation model	Not checked
- DGPS corrections	Not checked
- Reference location	Not checked
- Reference time	Not checked
- Acquisition assistance	Not checked
- Real-time integrity	Not checked
- Navigation model additional data	Not checked
Measured Results on RACH	Not present
Additional Measured Results	Not present
Event Results	Not present

MEASUREMENT CONTROL (Step 7a (Option 2)):

Information element	Value/remark
Measurement Information Elements	
Measurement Identity	10
Measurement Command	~~Setup~~Modify
Measurement Reporting Mode	
- Measurement report transfer mode	Acknowledged mode RLC
- Periodical reporting / Event trigger reporting mode	Periodical reporting
Additional Measurements List	Not present
CHOICE *Measurement type*	UE positioning measurement
- UE positioning measurement	
- UE positioning reporting quantity	
- Method type	UE assisted
- Positioning methods	GPS
- Response time	128
- Horizontal accuracy	Set according to 17.2.1.2 (unequal to 0)
- Vertical accuracy	Set according to 17.2.1.2 (unequal to 0)
- GPS timing of cell wanted	FALSE
- Multiple sets	FALSE
- Additional assistance data request	FALSE
- Environmental characterization	Not present
- Measurement validity	
- UE state	All states
- CHOICE *Reporting criteria*	Periodical reporting criteria
- Amount of reporting	1
- Reporting interval	64000
- UE pos OTDOA assistance data for UE-assisted	Not present
- UE pos OTDOA assistance data for UE-based	Not present
- UE positioning GPS assistance data	Set as specified ~~for "Adequate assistance data for UE-assisted A-GPS"~~ in 17.2.1.3.5.
Physical Channel Information Elements	
DPCH compressed mode status info	Not present

REGISTER (Step 8)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 12)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 RELEASE COMPLETE (0x10 1010) Return result = LCS-LocationNotification LocationNotificationRes verificationResponse -> permissionDenied

REGISTER (Step 13)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type Facility	 REGISTER (0x11 1011) Invoke = LCS-LocationNotification LocationNotificationArg notificationType -> notifyAndVerify-LocationNotAllowedIfNoResponse locationType -> current Location lcsClientExternalID -> externalAddress lcsClientName ->dataCodingScheme nameString

RELEASE COMPLETE (Step 18)

Information element	Value/remark
Protocol Discriminator	Call Independent SS message (1011)
Transaction identifier Message type	 RELEASE COMPLETE (0x10 1010)

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050193

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1085** ⌘**rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Approved RRC Package 3 TC 8.4.1.33
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

In this testcase there is a requirement that an event triggered reporting delay shall be about 1.4s. According the minimum requirements of the event triggered reporting delay in 25.133, paragraph 8.1.2.5.4 the actual delay may be substantially longer. So there is an error with this requirement.

In the testcase 8.4.1.33, the UE is in Cell_DCH state with one radio link to the UTRA cell, “Cell 1”. The UE performs measurements on three GSM cells, “Cell 1”, “Cell 2” and “Cell 3” in the compressed mode gaps.

In Step 7 in the test sequence the RF signal level of the GSM cell “Cell1” is increased 15 dB from –85 to –70 dBm. Thereby the level is higher than the triggering threshold, -80 dBm, simultaneously as the quality of the UTRA “Cell 1” is lower than the threshold –66 dBm of the own system. Thereby the GSM “Cell 1” has a level that can trigger an event 3A.

In Step 8 in the expected sequence of the testcase it is stated “After about 1.4s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3a.”

This delay is shorter than the minimum requirement for triggereing an event. The delay until a Measurement report is triggered consists of three parts, 1) identify that the GSM RF level have increased 2) delay the event according the “time to trigger” parameter and 3) delay until the Measurement report is actually sent

“Time to Trigger” in this testcase is set to 640 ms and there is no Layer 3 filtering of the measured data.

The minimum requirement on how fast an event trigger shall happen is specified

	in 25.133, paragraph 8.1.2.5.4, Even Triggered Reporting. It is specified that the event triggered measurement reporting delay for a GSM cell with verified BSIC shall be less than 2*TMeasurement Period, GSM, where TMeasurement Period, GSM is equal to 480 ms. Thus it takes 960 ms to identify that the cell is over the event threshold. When evaluating the “time to trigger” parameter, the UE may even wait until the next report from GSM is received to be sure that the signal during the whole “time to trigger” period, 640 ms has been higher than the event triggering threshold. Thus the delay due to time to trigger may be 2*480 ms =960 ms. The delay until a report is sent is according 25.133 the time alignment to the TTI structure, and is given as twice the TTI of the uplink TTI of the DCCH. The conclusion is that based on that the step size shall be identified and the signalled time to trigger, the event triggering delay may be as large as 1.920s +2*TTTI and still comply with the minimum requirements (960 ms for identifying the high level and 960 ms for the time to trigger). This delay is substantially longer than the 1,4 s mentioned in the testcase. Also if the delay due to the time to trigger is limited to 640 ms, the total even triggered delay is 1.6s +2*TTTI, which still is much larger than the 1.4 s stated in the testcase.
Summary of change: ⌘	Increase the delay to 2 seconds.
Consequences if not approved: ⌘	TC might fail a conformant UE.

Clauses affected:	⌘	8.4.1.33			
Other specs affected:	⌘	**Y** / **N** / **X** **X** / / **X**	Other core specifications Test specifications O&M Specifications	⌘	TS 34.123-3
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.33 Measurement Control and Report: Inter-RAT measurement, event 3a

8.4.1.33.1 Definition

8.4.1.33.2 Conformance requirement

1. When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled.

2. If the IE "DPCH Compressed Mode Status Info" is present, [in the MEASUREMENT CONTROL message]:

   - after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:

     - activate the pattern sequence stored in the variable TGPS_IDENTITY corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" at the time indicated by IE "TGCFN"; and

     - begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

     - if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:

       - start the concerned pattern sequence immediately at that CFN;

   - not alter pattern sequences stored in variable TGPS_IDENTITY, but not identitifed in IE "TGPSI"

3. The UE shall perform GSM RSSI measurements in the gaps of compressed mode pattern sequence specified for GSM RSSI measurement purpose. The UE shall perform Initial BSIC identification in compressed mode pattern sequence specified for Initial BSIC identification measurement purpose. The UE shall be able to measure the "Observed time difference to GSM cell" during a compressed mode pattern sequence configured for this purpose. The UE shall perform BSIC re-confirmation in compressed mode pattern sequence specified for BSIC re-confirmation measurement purpose.

4. If the IE "Inter-RAT measurement quantity" is received in a MEASUREMENT CONTROL message and CHOICE system is GSM, the UE shall:

   - if IE "BSIC verification required" is set to "required", for cells that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list", and that has a "verified" BSIC:

     - report measurement quantities according to IE "inter-RAT reporting quantity" taking into account the restrictions defined in TS 25.331 clause 8.6.7.6;

     - trigger inter-RAT events according to IE "inter-RAT measurement reporting criteria"; and

   - perform event evaluation for event-triggered reporting after BSIC has been verified for a GSM cell

   - indicate non-verified BSIC for a GSM cell in the "Inter-RAT measured results list" IE

5. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity".

6. If IE "Observed time difference to GSM cell Reporting indicator " is set to "TRUE" [, the UE shall]:

   include optional IE "Observed time difference to GSM cell" with the value set to the time difference to that GSM cell for the GSM cells that have a BSIC that is "verified", and that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list".

   - if IE "GSM Carrier RSSI" is set to "TRUE"[, the UE shall]:

- include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list".

- if the BSIC of reported GSM cell is "verified"[, the UE shall]:

  - set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list";

7. If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows.

   - the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" is the number specified in "Reporting Cell Status".

Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.6.7.5, 8.6.7.6, 8.6.7.9, 14.3.1.1, 14.3.2.1, 14.3.2.2, 14.3.2.3.

8.4.1.33.3 Test Purpose

1. To confirm that the UE starts compressed mode and inter-RAT measurements when so required by the network in a MEASUREMEN CONTROL message.

2. To confirm that the UE sends MEASUREMENT REPORT message if event 3a is configured, if the quality of the currently used UTRAN frequency is below a given threshold and the estimated quality of the other system is above a certain threshold.

3. To confirm that the hysteresis and time to trigger behaviours for event 3a are correctly implemented.

4. To confirm that the UE verifies the BSIC of the cell triggering the event if so required by UTRAN and if the proper compressed mode patterns have been configured in the UE by UTRAN.

5. To confirm that the content of the MEASUREMENT REPORT sent by the UE is according to what was required by UTRAN.

NOTE: Test purpose 1 verifies conformance requirement 1 and 2.

NOTE: Test purpose 2 and 3 verifies conformance requirement 1.

NOTE: Test purpose 4 verifies conformance requirement 2, 3 and 4.

NOTE: Test purpose 5 verifies conformance requirement 4, 5, 6 and 7.

8.4.1.33.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 3 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Compressed mode required yes/no

Test procedure

Table 8.4.1.33.4-1

Parameter	Unit	Cell 1 (GSM)					Cell 2 (GSM)					Cell 3 (GSM)				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
Test Channel	#	GSM Ch.1					GSM Ch.2					GSM Ch.3				
BCCH ARFCN	#	1					7					39				
CELL identity	#	0					1					2				
BSIC	#	BSIC 1					BSIC 2					BSIC 3				
RF Signal Level	dBm	-85	-85	-70	-76	-70	-85	-85	-85	-84	-84	-90	-90	-90	-90	-90

Table 8.4.1.33.4-2

Parameter	Unit	Cell 1 (UTRA)				
		T0	T1	T2	T3	T4
UTRA RF Channel Number		Ch.1				
CPICH Ec	dBm /3.84 Mhz	-60	-80	-80	-80	-60

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "T2", "T3" and "T4" indicate the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3a is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated.

At instant T1, the CPICH Ec drops as described in table 8.4.1.33.4-2.

At instant T2, the RF signal for GSM cell 1 increases, and crosses the threshold for the other system defined for event 3a.

After reception of the MEASUREMENT REPORT message, at instant T3, the RF signal strength for GSM cell 2 increases but remains below the threshold for the other system for event 3a. During that time, the RF signal strength for GSM cell 1 decreases, but remains above the releasing condition for event 3a.

At intant T4, the RF signal strength for GSM cell 1 increases above the threshold for the other system for event 3a+hysteresis. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3a in the UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode is started.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
6				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
8	→		MEASUREMENT REPORT	After about ~~1.4~~2s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3a.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11				SS re-adjusts the downlink transmission power settings according to columns "T4" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
12				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
13	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	66
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity

- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=3
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	2
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	39
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	
- Intra-frequency measurement quantity	
- Filter coefficient	0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0

- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3a
- Threshold own system	-66
- W	0
- Threshold other system	-80
- Hysteresis	5
- Time to Trigger	640 ms
- Reporting cell status	Report cells within active set or within virtual active set or of the other RAT
- Maximum number of reported cells	2 cells
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (250 – TTI/10msec))mod 256
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Activate
- TGCFN	(Current CFN + (254 – TTI/10msec))mod 256
- TGPSI	3
- TGPS status flag	Activate
- TGCFN	(Current CFN + (250 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable. RXLEV is mapped to a value between 0 and 63. The RSSI bits are numbered b0 to b5, where b0 is the least significant bit. When mapping the RXLEV value to the RSSI bit string, the first/ leftmost bit of the bit string contains the most significant bit.
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to 0.
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3a
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.33.5 Test requirement

The UE shall not send any measurement report between instants T1 and T2.

Event 3a shall be triggered in the UE (i.e.the transmission of the MEASUREMENT REPORT) after instant T2.

Between instants T2 and T3, no MEASUREMENT REPORT message shall be received from the UE (since the hysteresis condition for triggering event 3a is not fulfilled).

No MEASUREMENT REPORT message shall be received from the UE after instant T4 (since the signal strength for cell 1 has not dropped under Threshold for event 3a-hysteresis).

3GPP TSG T1 Meeting #26
Bangalore, 31th January – 4th February 2005

T1-050203 ⌘

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1086 ⌘ **rev** - ⌘ Current version: **5.a.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS 34.123-1 v5.a.0 - Correction to Package 2 Test Case 6.2.2.2
Source:	⌘	Panasonic
Work item code:	⌘	TEI
Date:	⌘	24/01/05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Test requirement 3) is misleading, and is not consistent with the test procedure g).
Summary of change:	⌘	Test requirement 3) is corrected to be in line with test procedure g)
Consequences if not approved:	⌘	Ambiguity of Cell 1 power value exists in the test prose

Clauses affected:	⌘	6.2.2.2			
Other specs affected:	⌘	**Y**	**N**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5 UEs			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION >

6.2.2.2 Cell reselection if cell becomes barred or C1<0; GSM to UTRAN

6.2.2.2.1 Definition

Test to verify that if both a GSM and UTRAN network is available, the UE performs cell reselection from GSM to UTRAN if the GSM cell becomes barred or the path loss criterion C1 falls below zero for a period of 5 s.

6.2.2.2.2 Conformance requirement

1. At least every 5 s the MS shall calculate the value of C1 and C2 for the serving cell and re-calculate C1 and C2 values for non serving cells (if necessary). The MS shall then check whether:

   1.1 The path loss criterion (C1) for current serving cell falls below zero for a period of 5 s. This indicates that the path loss to the cell has become too high.

2. While camped on a cell of the registered PLMN ("camped normally"), the MS may need to select a different cell ("normal cell reselection" state). The following events trigger a cell reselection:

   2.1 The path loss criterion parameter C1 (see TS 03.22, clause 3.6) indicates that the path loss to the cell has become too high;

   2.2 The cell camped on (current serving cell) has become barred.

… …

Test procedure

Method B is applied.

a) The SS activates cells 1, and 2. The SS monitors cells 1 and 2 for random access requests from the UE.

b) Void.

c) Void

d) The SS sets Cell 9 to be barred. The SS notifies UE of the BCCH modification

e) The SS waits for random access request from the UE.

f) The UE is switched off. The SS sets Cell 9 to be not barred

g) Step a-e) is repeated except that in step d), the SS reduces signal level on Cell 9 to –80 dBm for 4 s and then raises the level back to –50 dBm (C1 becomes –10 dBm during this period).

h) The SS reduces signal level on Cell 9 to –80 dBm.

6.2.2.2.5 Test Requirements

1) In step a), after the UE has responded on Cell 9, it shall not respond on any other cell within 1 min.

2) In step e), the UE shall respond on Cell 1.

3) In step g), there shall be no access on Cell 1 within 30 s, after having reduced the signal level on Cell ~~1~~9.

4) In step h), the UE shall respond on Cell 1.

<END OF MODIFIED SECTION >

3GPP TSG T1 Meeting #26
Bangalore, 31th January – 4th February 2005

T1-050204 ⌘

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1087 ⌘ **rev** - ⌘ Current version: **5.a.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS 34.123-1 v5.a.0 - Correction to Low-Priority Test Case TC 8.1.8.3
Source:	⌘	Panasonic
Work item code:	⌘	TEI
Date:	⌘	24/01/05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The message content of RADIO BEARER SETUP (Step 2) (FDD) is incorrectly specified according to clause 10.3.4.23 and 10.3.4.25 of TS 25.331.
Summary of change:	⌘	In the message content of RADIO BEARER SETUP (Step 2) (FDD), the following IEs are modified: - IE “CHOICE SDU discard mode” is being removed. - The remark of IE “Transmission RLC discard” in IE “TM RLC” is set as “Not Present”.
Consequences if not approved:	⌘	Ambiguities exist in the test prose, and a test implementation might wrongly configure RLC discard mechanism for UL TM RLC in UE.

Clauses affected:	⌘	8.1.8.3			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5 UEs			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.8.3 Counter check in CELL_DCH state, with asymmetric RAB

8.1.8.3.1 Definition

8.1.8.3.2 Conformance requirement

When the UE receives a COUNTER CHECK message it shall compare the COUNT-C MSB values received in the IE "RB COUNT-C MSB information" in the COUNTER CHECK message to the COUNT-C MSB values of the corresponding radio bearers.

The UE shall:

1> if no COUNT-C exists for a radio bearer for a given direction (uplink or downlink) because:

2> it is a uni-directional radio bearer configured only for the other direction (downlink or uplink respectively), or

2> it has been configured to RLC-TM mode in one direction (uplink or downlink) and RLC-UM in the other (downlink or uplink respectively),

3> set the COUNT-C in the IE "RB COUNT-C information" in the COUNTER CHECK RESPONSE message, to any value;

1> submit a COUNTER CHECK RESPONSE message to lower layers for transmission on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.1.15.

8.1.8.3.3 Test purpose

To confirm that the UE transmits a COUNTER CHECK RESPONSE message even if COUNT-C does not exist for a radio bearer for a given direction for reasons given in the above section.

8.1.8.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) or PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the domain supported by the UE.

Test Procedure

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. SS sends a RADIO BEARER SETUP message to set up an asymmetric radio bearer. UE shall configure accordingly and then reply with a RADIO BEARER SETUP COMPLETE message. Then SS transmits a COUNTER CHECK message. The UE shall send a COUNTER CHECK RESPONSE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state after an outgoing call has been established successfully.
2	←		RADIO BEARER SETUP	See specific message contents for this message
3	→		RADIO BEARER SETUP COMPLETE	
4	←		COUNTER CHECK	See specific message content.
5	→		COUNTER CHECK RESPONSE	The message shall include the IE "RB COUNT-C information".

Specific Message Contents

RADIO BEARER SETUP (Step 2) (FDD)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Non speech from CELL_DCH to CELL_DCH in CS" or "Speech from CELL_DCH to CELL_DCH in CS" or "Packet to CELL_DCH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
RAB information for setup	
- RAB info	
- RAB identity	0000 0101B (for PS domain) or 0000 0001B (for CS domain) The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain or CS domain (depending on the domain supported by the UE)
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	UseT315 (for PS domain) or UseT314 (for CS domain)
- RB information to setup	
- RB identity	9
- PDCP info	
- Support for lossless SRNS relocation	FALSE
- Max PDCP SN window size	Not present
- PDCP PDU header	Absent
- Header compression information	Not present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	TM RLC
- Transmission RLC discard	Not Present
~~- CHOICE SDU discard mode~~	~~Not Present~~
- Segmentation indication	False
- CHOICE Downlink RLC mode	UM RLC
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	4
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	9
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit List
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
Added or Reconfigured TrCH information list	1 DCH added
- Added or Reconfigured UL TrCH information	
- Uplink transport channel type	DCH
- UL Transport channel identity	4
- TFS	
- CHOICE Transport channel type	Dedicated transport channels
- Dynamic Transport format information	
- RLC Size	Reference to TS34.108 clause 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Transmission Time Interval	Not Present
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	All
- Semi-static Transport Format information	
- Transmission time interval	Reference to TS34.108 clause 6.10 Parameter Set
- Type of channel coding	Reference to TS34.108 clause 6.10 Parameter Set

- Coding Rate - Rate matching attribute - CRC size	Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set
Added or Reconfigured TrCH information list Added or Reconfigured DL TrCH information - Downlink transport channel type - DL Transport channel identity - CHOICE DL parameters - Uplink transport channel type - UL TrCH identity - DCH quality target - BLER Quality value	1 DCH DCH 9 Same as UL DCH 1 -2.0

COUNTER CHECK (Step 4)

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info Message authentication code RRC Message sequence number RB COUNT-C MSB information - RB COUNT-C MSB information - RB identity - COUNT-C MSB uplink - COUNT-C MSB downlink	 0 Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. Next RRC SN 9 Arbitrary Set to current COUNT-C for RB#9 in downlink

COUNTER CHECK RESPONSE (Step 5)

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info RB COUNT-C information - RB identity - COUNT-C uplink - COUNT-C downlink	 0 Not checked Check to see if set to 9 Check to see if it is present Check to see if it is present

8.1.8.3.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH.

After step 4, the UE shall transmit a COUNTER CHECK RESPONSE message.

3GPP TSG T1 Meeting #26
Bangalore, 31th January – 4th February 2005

T1-050206 ⌘

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1088 ⌘ **rev** - ⌘ Current version: **5.a.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS 34.123-1 v5.a.0 - Editorial corrections to Package 4 test case 8.3.7.5 and Package 3 test case 8.4.1.31
Source:	⌘	Panasonic
Work item code:	⌘	TEI
Date:	⌘	24/01/05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
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A *(corresponds to a correction in an earlier release)*
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Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The test proses are not aligned to the message structure specified in TS 25.331 clause 10.3.7.23
Summary of change:	⌘	Definition of the IE “Inter-RAT cell info list” is modified to be in line with the structure specified in TS 25.331 clause 10.3.7.23
Consequences if not approved:	⌘	Ambiguities will remain in the specific message content of test case 8.3.7.5 and 8.4.1.31

Clauses affected:	⌘	8.3.7.5 and 8.4.1.31
Other specs affected:	⌘	Y / N ☐ / ☒ Other core specifications ☐ / ☒ Test specifications ☐ / ☒ O&M Specifications
	⌘	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5 UEs

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION – 8.3.7.5>

8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

8.3.7.5.1 Definition

8.3.7.5.2 Conformance requirement

If the UE does not succeed in establishing the connection to the other target radio access technology, it shall

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

…

transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5.

… …

MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
- New inter-RAT cells	
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 or PCS 1900 (dependent on band used)
- BCCH ARFCN	value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 or PCS 1900 (dependent on band used)
- BCCH ARFCN	value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

<END OF MODIFIED SECTION – 8.3.7.5 >

<START OF MODIFIED SECTION – 8.4.1.31>

8.4.1.31 Measurement Control and Report: Inter-RAT measurement in CELL_DCH state.

8.4.1.31.1 Definition

8.4.1.31.2 Conformance requirement

A UE supporting both FDD and GSM shall be able to perform the GSM RSSI measurement and the GSM Initial BSIC identification measurement.

If, according to its capabilities, the UE requires compressed mode to perform GSM RSSI measurements, the UE shall perform GSM RSSI measurements in the gaps of a compressed mode pattern sequence specified for GSM RSSI measurement purpose.

If, according to its capabilities, the UE requires compressed mode to perform GSM Initial BSIC identification measurements, the UE shall perform GSM Initial BSIC identification in a compressed mode pattern sequence specified for Initial BSIC identification measurement purpose.

Reference

3GPP TS 25.133, clause 8.1.2.5; 3GPP TS 25.331, clauses 8.6.7.6, 14.3.2.

… …

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
- New inter-RAT cells	
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

<END OF MODIFIED SECTION – 8.4.1.31>

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Tdoc ⌘T1-050232

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.123-1** **CR** 1089 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to 34.123, clause 6, idle mode test case 6.1.2.9
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	N/A
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	With q_Qualmin = -24 the Cell Reselection criteria is not fullfilled and the UE will not reselect any neighbour cell
Summary of change:	⌘	Qqualmin should be set to -16 for Cell 1 and Cell 4 to fullfill the Cell Reselection criteria
Consequences if not approved:	⌘	Testcase 6.1.2.9 will incorrectly fail a conformant UE.

Clauses affected:	⌘	6.1.2.9.4

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This CR aligns the prose with the TTCN implementation (see TTCN approval CR T1s040794)

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.1.2.9 Cell reselection using cell status and cell reservations

6.1.2.9.1 Definition

Test to verify that the UE correctly interprets cell status and cell reservations when performing cell reselection.

6.1.2.9.2 Conformance requirement

1. When cell status is indicated as "not barred", "not reserved" for operator use and "not reserved" for future extension (Cell Reservation Extension),

   - the UE may select/re-select this cell during the cell selection and cell re-selection procedures in Idle mode and in Connected mode.

2. When cell status is indicated as "not barred", "not reserved" for operator use and "reserved" for future extension (Cell Reservation Extension),

   - UEs shall behave as if cell status "barred" is indicated using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator" and the maximum value for T_{barred}, see [8] (see also below).

3. When cell status is indicated as "not barred" and "reserved" for operator use,

   - UEs assigned to Access Class 11 or 15 may select/re-select this cell if in the home PLMN.

   - UEs assigned to an Access Class in the range 0 to 9 and 12 to 14 shall behave as if cell status "barred" is indicated using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator" and the maximum value for T_{barred}, see [8] (see also below).

4. When cell status "barred" is indicated,

   - The UE is not permitted to select/re-select this cell, not even for emergency calls.

   - The UE shall ignore the "Cell Reserved for future extension (Cell Reservation Extension) use" IE.

   - The UE shall select another cell according to the following rule:

     - If the "Intra-frequency cell re-selection indicator" IE in Cell Access Restriction IE is set to value "allowed", the UE may select another cell on the same frequency if selection/re-selection criteria are fulfilled.

       - If the UE is camping on another cell, the UE shall exclude the barred cell from the neighbouring cell list until the expiry of a time interval T_{barred}. The time interval T_{barred} is sent via system information in a barred cell together with Cell status information in the Cell Access Restriction IE.

       - If the UE does not select another cell, and the barred cell remains to be the "best" one, the UE shall after expiry of the time interval T_{barred} again check whether the status of the barred cell has changed.

     - If the "Intra-frequency cell re-selection indicator" IE is set to "not allowed" the UE shall not re-select a cell on the same frequency as the barred cell. For emergency call, the Intra-frequency cell re-selection indicator IE" shall be ignored, i.e. even if it is set to "not allowed" the UE may select another intra-frequency cell.

       - If the barred cell remains to be the "best" one, the UE shall after expiry of the time interval T_{barred} again check whether the status of the barred cell has changed.

   The reselection to another cell may also include a change of RAT.

Reference(s)

3GPP TS 25.304, clause 5.3.1.1

6.1.2.9.3 Test purpose

1. To verify that when cell status is indicated as "not barred", "not reserved" for operator use and "reserved" for future extension (Cell Reservation Extension),

   - UEs behave as if cell status "barred" is indicated using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator" and the maximum value for T_{barred}.

2. To verify that when cell status is indicated as "not barred" and "reserved" for operator use,

   - UEs assigned to Access Class 11 or 15 may select/re-select this cell if in the home PLMN.

   - UEs assigned to an Access Class in the range 0 to 9 and 12 to 14 shall behave as if cell status "barred" is indicated using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator" and the maximum value for T_{barred}.

6.1.2.9.4 Method of test

Initial conditions

Test procedure 1: Use of USIM with "Type A" EF_{ACC} as defined in TS 34.108.

Step a-c (FDD):

Parameter	Unit	Cell 1	Cell 2	Cell 4
Test Channel		1	1	2
CPICH_Ec	dBm/3.84 MHz	-58	-68	-78
Qqualmin	dB	-16	-24	-16
Qrxlevmin	dBm	-83	-83	-83
Srxlev*	dB	25	15	5
Cell Reserved for operator use		not reserved	not reserved	not reserved
Cell Reservation Extension		not reserved	not reserved	not reserved

Step a-c (TDD):

Parameter	Unit	Cell 1	Cell 2	Cell 4
P-CCPCH RSCP	dBm	-69	-74	-79
Qrxlevmin	dBm	-83	-83	-83
Srxlev*	dB	15	10	5

Step d-e:

Cell Reserved for operator use		not reserved -> reserved	not reserved	not reserved
Cell Reservation Extension		not reserved	not reserved	not reserved

Step f-g:

Cell Reserved for operator use		reserved -> not reserved	not reserved	not reserved
Cell Reservation Extension		not reserved	not reserved	not reserved

Test procedure 2: Use of USIM with "Type B" EF_{ACC} as defined in TS 34.108.

Step a-c (FDD):

Parameter	Unit	Cell 1	Cell 2	Cell 4
Test Channel		1	1	2
CPICH_Ec	dBm/3.84 MHz	-58	-68	-78
Qqualmin	dB	-16	-24	-16
Qrxlevmin	dBm	-83	-83	-83
Srxlev*	dB	25	15	5
Cell Reserved for operator use		not reserved	not reserved	not reserved
Cell Reservation Extension		not reserved	not reserved	not reserved

Step a-c (TDD):

Parameter	Unit	Cell 1	Cell 2	Cell 4
P-CCPCH RSCP	dBm	-68	-73	-78
Qrxlevmin	dBm	-83	-83	-83
Srxlev*	dB	15	10	5

Step d-e:

Cell Reserved for operator use		not reserved	not reserved	not reserved
Cell Reservation Extension		not reserved -> reserved	not reserved	not reserved

Step f-g:

Cell Reserved for operator use		not reserved -> reserved	not reserved	not reserved
Cell Reservation Extension		reserved	not reserved	not reserved

Related ICS/IXIT Statement(s)

None

Test procedure 1

Method B applied.

a) The SS activates Cell 1, 2 and 4, and monitors them for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) The SS sets Cell 1 to "reserved" for operator use. The SS notifies UE of the BCCH modification.

e) The SS waits for random access requests from the UE.

f) The SS sets Cell 1 to "not reserved" for operator use.

g) The SS waits for random access requests from the UE.

Test procedure 2

Method B applied.

a) The SS activates Cell 1, 2 and 4, and monitors them for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE.

d) The SS sets Cell 1 to "reserved" for future extension. The SS notifies UE of the BCCH modification.

e) The SS waits for random access requests from the UE.

f) The SS sets Cell 1 to "reserved" for operator use.

g) The SS waits for random access requests from the UE.

6.1.2.9.5 Test requirements

Test procedure 1

1) In step c), the UE shall respond on Cell 1.

2) In step e), the UE shall respond on Cell 4.

3) In step g), the UE shall respond on Cell 1 after 1280 seconds (maximum value for T_{barred}) from SS notified UE of the BCCH modification in Cell 1 in step d).

Test procedure 2

1) In step c), the UE shall respond on Cell 1.

2) In step e), the UE shall respond on Cell 4.

3) In step g), the UE shall respond on Cell 1 after 1280 seconds (maximum value for T_{barred}) from SS notified UE of the BCCH modification in Cell 1 in step d).

3GPP TSG-T WG1 Meeting #26
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CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1090** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 Testcase 8.4.1.5
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	As per 25.133 section 8.1.2.2.1, A cell shall be considered detectable when • CPICH Ec/Io > -20 dB This condition is not met when the cell power is set to -72dBm. Taking into account the tolerance for CPICH Ec/Io (34.121 section 8.7.2.1.1.2), changing the power level to -70dBm results in stable pass of the test case.
Summary of change:	⌘	Changed the Power level of Cell 2 at T0 to be -70dBm
Consequences if not approved:	⌘	Test Case may fail a conformant UE.

Clauses affected:	⌘	8.4.1.5.4

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This requires TTCN Changes.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL_DCH to CELL_FACH state (FDD)

8.4.1.5.1 Definition

8.4.1.5.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH state, the UE shall:

1> stop intra-frequency type measurement reporting;

1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or

1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

1> if the transition is not due to a reconfiguration message:

2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT_IDENTITY.

1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331).

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH:

2> resume the measurement reporting.

1> if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);

2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331):

3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

Reference

3GPP TS 25.331, clause 8.4.1.6.1, 8.4.1.7.1

8.4.1.5.3 Test Purpose

1. To confirm that the UE stops performing intra-frequency measurement reporting specified in a MEASUREMENT CONTROL message, when it moves from CELL_DCH state to CELL_FACH state.

2. To confirm that the UE reads the System Information Block type 11 or 12 messages when it enters CELL_FACH state from CELL_DCH state, and starts to monitor the cells listed in the IE "intra-frequency cell info list".

3 To confirm that the UE performs measurements on uplink RACH transmissions and appends the measured results in RACH messages, when it receives IE "intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" in the System Information Block type 11 or 12 messages.

4. To confirm that the UE applies the reporting criteria in IE "intra-frequency reporting criteria" in System Information Block Type 11 or 12 messages following a state transition from CELL_FACH to CELL_DCH, if no intra-frequency measurements applicable to CELL_DCH are stored.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 and cell 2 are active, while cell 3 is switched off..

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 11 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

Test Procedure

Table 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-70 ~~-72~~	-85	-122	-70

The UE is initially in CELL_DCH state. The System Information Block type 11 message is modified compared to the default message contents, in order to prevent the reporting of "Cell synchronisation information". No measurement to be applied by the UE in CELL_DCH state is specified in any of the System Information Block type 11 or 12 messages.

SS sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement for the measurement of cell 2's CPICH RSCP. At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds. The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.
SS transmits PHYSICAL CHANNEL RECONFIGURATION message to move the UE to CELL_FACH. After receiving this message, the UE shall reconfigure itself and reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. SS starts T305 timer and SS monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. SS transmits System Information Block type 12 messages in cell 1, which include cell 3 into the IE "intra-frequency cell info list" and modifies SIB11 to indicate that SIB12 is now being broadcast. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in the System Information Type 12 messages. Event type 1a reporting criterion is specified for intra-frequency measurements. SS transmit SYSTEM INFORMATION CHANGE INDICATION message to UE. SS waits until T305 has expired. The UE shall respond with a CELL UPDATE message, which comprises IE "Measured results on RACH" to report the readings of CPICH RSCP for cell 1 and cell 3. SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change the physical resources nor allocate any new RNTI identities. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, and configures dedicated physical channel for both uplink and downlink directions. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages.

SS shall receive the MEASUREMENT REPORT messages at 500 milliseconds interval.

SS verifies that it includes CPICH RSCP values of the cells 1and 3 in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results".

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in PS-DCCH+DTCH_DCH (state 6-10) in cell 1.
2			Void	
3			Void	
4			Void	
5	←		MEASUREMENT CONTROL	SS requests for measurement of cell 2´s CPICH RSCP value and reporting of CPICH RSCP values of active cells and monitored set cells.
6	→		MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval.
7	←		PHYSICAL CHANNEL RECONFIGURATION	SS moves the UE to CELL_FACH state.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state. SS starts T305 timer.
9	←		Master Information Block System Information Block type 11, 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. SIB 11 is modified to indicate that SIB12 is now broadcast and to add cell 2 as a neighbour cell. SIB 12 indicates that cell 3 is included in the IE "intra-frequency cell info list". SS waits for 1 minute and verifies that no MEASUREMENT REPORT messages are detected on the uplink.
10	←		SYSTEM INFORMATION CHANGE INDICATION	SS waits until T305 has expired.
11	→		CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 present in this message.
12	←		CELL UPDATE CONFIRM	No changes in physical resource allocation and RNTI identities.
13	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15	→		MEASUREMENT REPORT	Repeated at 500 milliseconds interval

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 5)

Information Element	Value/remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured result list	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)"

MASTER INFORMATION BLOCK (Step 9)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/Remarks
MIB Value Tag	2

System Information Block type 11 (Step 9)

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

System Information Block type 12 (Step 9)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	6
- Intra-frequency cell cells	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0dB
- Maximum allowed UL TX power	0dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin, Qrxlevmin	-20dB, -115dBm
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell + best neighbour
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting range constant	14.5dB
- Cells forbidden to affect reporting	Not present

- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	7
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting Interval	500 milliseconds
- Reporting cell status	
- CHOICE *reported cell*	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not present

SYSTEM INFORMATION CHANGE INDICATION (Step 10)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	2

CELL UPDATE (Step 11)

Information Element	Value/remark
U-RNTI	Check to see if set to the same value assigned during the execution of procedure P3 or P5.
START list	Checked to see if this IE is present
AM_RLC error indication(RB2, RB3 or RB4)	FALSE
AM_RLC error indication(RB>4)	FALSE
Cell update cause	Check to see if it is set to "Periodical cell update"
Failure case	Check to see if it is absent
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
- Measurement results for monitored cells	
- SFN-SFN observed time difference	Check to see if it is absent
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

MEASUREMENT REPORT (Step 15)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain IE "measured result" to report cell 2's CPICH RSCP value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall perform a cell update procedure and transmit a CELL UPDATE message. In this message, measured values CPICH RSCP for cell 1 and cell 3 shall be included in the IE "measured results on RACH".

After step 14, the UE shall apply the intra-frequency measurement reporting criteria" received in System Information Block type 12 messages of step 9. It shall send MEASUREMENT REPORT messages at 500 milliseconds interval. In these messages, triggering of event '1a' shall be reported in IE "Event results" with IE "Primary CPICH info" containing the primary scrambling code for cell 3.

The message shall contain IE "measured result" to report CPICH RSCP values of cell 1and 3.

3GPP TSG-T1 Meeting #26
Bangalore,India, 31Jan- 4Feb 2005

Tdoc ⌘T1-050272

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1091** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 RRC test case 8.1.10.1
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘ 1)TS 34.123-1 section 8.1.10.1.4 states that all the optional IEs should be present for the Maximum configuration for SIB 6 and SIB 12. But if all the optional IEs are defined to be present in SIB 6 and SIB 12, then number of segments required to transmit the SIB 6 and SIB12 information would be more than that defined in the scheduling information for the maximum configuration.
2) As per the scheduling information for the maximum configuration for SIB 11, 4 segments will be transmitted. However the default message content defined in 34.108 section 6.1 will result in SIB11 of 2 segments only. Thus the contents of SIB11 transmitted for maximum cinfiguration needs to be modified to consist of 4 segments.
3) As per the scheduling information for the minmum configuration for SIB 11, 4 segments will be transmitted. However the default message content defined in 34.108 section 6.1 and the scheduling information defined in 34.123-1 section 8.1.10.1.4, will result in only 3 segments being transmitted for SIB11. Thus the scheduling information for the minmum configuration for SIB11is modified to consist of 3 segments.
Note: Change 1 and 2 will require TTCN change whereas change 3 will align prose to TTCN.

Summary of change: ⌘ 1)For the maximum configuration, added specific message content for SIB 6 and SIB 12 to indicate which optional IEs are defined to be present in order to satisfy the scheduling information for the maximum configuration.
2) Added Specific Message content for SIB 11 to be transmitted for maximum configuration.

3) Modified Scheduling information for minmum configuration for SIB11 to have 3 segments.

Consequences if not approved:	⌘	Inconsistency will remain in 34.123-1 between test purpose and test procedure.

Clauses affected:	⌘	8.1.10.1.4			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	
			Test specifications		
			O&M Specifications		
Other comments:	⌘	Affects R99, Rel-4 and Rel-5.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION>

8.1.10.1 Dynamic change of segmentation, concatenation & scheduling and handling of unsupported information blocks

8.1.10.1.1 Definition

8.1.10.1.2 Conformance requirement

1. The RRC layer in the UE shall perform re-assembly of segments. All segments belonging to the same master information block, scheduling block or system information block shall be assembled in ascending order with respect to the segment index. When all segments of the master information block, scheduling block or a system information block have been received, the UE shall perform decoding of the complete master information block, scheduling block or system information block.

2. For all system information blocks or scheduling blocks that are supported by the UE referenced in the master information block or the scheduling blocks, the UE shall perform the following actions:

   ……..

   - read and store the IEs of that system information block;

NOTE: There are options with and without scheduling blocks.

3. For system information blocks, not supported by the UE…….

   - skip reading this system information block;

   - skip monitoring changes to this system information block.

4. However, to enable future introduction of new system information blocks, the UE shall also be able to receive system information blocks other than the ones indicated within the scheduling information. The UE may ignore contents of such system information block.

Reference

3GPP TS 25.331 clause 8.1.1.1.4, 8.1.1.5 and 8.1.1.6.

8.1.10.1.3 Test Purpose

1. To verify that dynamic change of System Information is identified, new information read and used.

2. To verify that the UE can support all segment types and "all" segment combinations.

3. To verify that the UE can dynamically use different configurations

4. To verify that the UE properly uses combinations of Default and assigned values.

NOTE: There are 4 segment types and 11 different SYSTEM INFORMATION segment combinations to interpret when re-assembling segments. There are many alternative SIB position offsets and repetition rates.

The allowed segment types are:

- First segment

- Subsequent segment

- Last segment

- Complete

The allowed segment combinations are:

1. No segment
2. First segment
3. Subsequent segment
4. Last segment
5. Last segment + First segment
6. Last segment + one or several Complete
7. Last segment + one or several Complete + First segment
8. One or several Complete
9. One or several Complete + First segment
10. One Complete of size 215 to 226 (not fully tested)
11. Last segment of size 215 to 222

NOTE: Segment combinations 10 and 11 are more difficult to test as they require SIBs of a very specific size.

8.1.10.1.4 Method of test

Alternate two sets of System Information and generate a call after one or the other set has been broadcasted.

These two sets of System Information are based on the System Information specified in 34.108, section 6.

A "Minimum" configuration and a "Maximum" configuration of System Information are defined. The "Minimum" configuration does not contain all of the Information Blocks defined for Configuration 1 in section 6 of 34.108~~, while the "Maximum" configuration does.~~. On the other hand the "Maximum" configuration, defined by the scheduling information in Table 2, contains extra optional information blocks to ensure that the SIB configuration is consistent with the defined scheduling The contents of the SIBs remains the same (~~for the "Minimum" configuration,~~ the contents of SIB11 changes for the "Maximum" configuration) while the contents of the MIB and SB is altered depending on the nature of the test, i.e. the schedule changes between the "Minimum" and "Maximum" configurations.

The four segment types and the eleven segment combinations are tested using the two configurations.

NOTE: The decoding of system information in the UE is only measurable by functional tests. A large number of functions utilize system information. An extensive test of the system information decoding thus creates a large number of functional tests, which is impractical. This test specification uses a "sample test", where only a few functions are invoked.

Initial Condition

System Simulator: 2 cells (Cell 1, Cell 2), settings for Cell 1 and Cell 2 according to TS 34.108, clause 6.1.5, table 6.1.2 (Cell 1 configured as the serving cell). The Minimum Configuration System Information is being broadcast in Cell 1. The Maximum Configuration System Information is being broadcast in Cell 2.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 with a CN UE identity (set to IMSI) ,depending on the CN domain(s) supported by the UE.

Test procedure

Table 8.1.10.1-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.1.10.1-1

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec	dBm/ 3.84 MHz	-60	-65

a) The UE is in C1 in Camped Normally state.

b) UE starts establishing a MO call/session.

c) SS disconnects the call. UE shall enter IDLE state.

d) The SS sets the Cell Barred Indicator in SIB3 to "Barred". The SS notifies the UE of the changed System Information by sending the Paging Type 1 message including the IE BCCH Modification Info indicating that new System Information is available.

e) Based on the updated information in SIB3, the UE performs a cell reselection to Cell 2. The UE reads the System Information in Cell 2, i.e. Maximum Configuration System Information.

f) UE starts establishing a MO call/session.

Note: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	UE			Mobile originated call/session establishment
2	SS			Disconnection of call
3	←		System Information (Minimum Configuration)	System Information message is sent in Cell 1 with the Cell Barred Indicator in SIB3 set to "Barred".
4	←		Paging Type 1	This message is to inform the UE in Idle State that System Information has been updated.
5	UE			Mobile originated call /session establishment
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific message content for "Minimum" configuration

The Minimum configuration is the same as the Configuration 1 System Information on 34.108, section 6 with some differences:

- Only SIB1, SIB3, SIB5, SIB7, SIB11 are used, i.e. the Minimum number of SIBs is used.
- No SB is used, all scheduling information is contained in the MIB. The contents of this changed MIB are shown below.
- A different schedule is used. Details below.
- SIB11 lists eight cells (one serving cell and seven neighbouring cells). Only the first two of these are considered relevant.

Other characteristics of the Minimum configuration are:

- An unknown future System Information Block (SIB-F1) is included. SIB-F1 is used to test segment combination 10. However, it should be noted that, based on the scheduling information in the MIB, UEs may decide not to

read segment combinations associated with SIBs that they do not support/comprehend. Hence, the use of SIB-F1 does not fully cover the verification of combinations 10. The tests really just verify that UE ignores it. There is no real verification that the UE can support segment combinations 10.

The following tables show (based on SIB_REP and SIB_POS in the MIB and SB) the schedule used for the Minimum configuration.

Table 1: The schedule in this table incorporates segment combinations 1, 2, 3, 4, 7, 8, 10.

Block Type	MIB	SIB1	SIB3	SIB5	SIB7	SIB11
SIB_REP	8	64	64	64	16	64
SEG_ COUNT	1	1	1	3	1	43

Frame No / SIB_POS	0	2	4	6	8	10	12	14
Block Type	MIB		SIB7		MIB			

Frame No / SIB_POS	16	18	20	22	24	26	28	30
Block Type	MIB		SIB7/SIB 3	SIB1	MIB		SIB-F1	SIB5

Frame No / SIB_POS	32	34	36	38	40	42	44	46
Block Type	MIB	SIB5	SIB5/SIB 7/SIB11	SIB11	MIB	SIB11	~~SIB11~~	

Frame No / SIB_POS	48	50	52	54	56	58	60	62
Block Type	MIB		SIB7		MIB			

Contents of Master Information Block PLMN type is the case of GSM-MAP

- MIB value tag	1
- Supported PLMN types	
- PLMN type	GSM-MAP
- PLMN identity	
- MCC digit	Set to the same Mobile Country Codes stored in the test USIM card (TS 34.108 clause 8.3.2.2 EF IMSI(IMSI)).
- MNC digit	Set to the same Mobile Network Codesstored in the test USIM card (TS 34.108 clause 8.3.2.2 EF IMSI(IMSI)).
- ANSI-41 Core Network information	Not Present
- References to other system information blocks and scheduling blocks	
- References to other system information blocks	
- Scheduling information	
- CHOICE Value tag	PLMN Value tag
- PLMN Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	22
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 1
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	20
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 3
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	3
- SIB_REP	64
- SIB_POS	30
- SIB_POS offset info	
- SIB_OFF	4
- SIB_OFF	2
- SIB type	System Information Type 5
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	16
- SIB_POS	4
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 7
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	~~4~~3
- SIB_REP	64
- SIB_POS	36
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	4
~~- SIB_OFF~~	~~2~~
- SIB and SB type	System Information Type 11
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	28
- SIB_POS offset info	Not Present – use default
- SIB and SB type	System Information Type F1

Specific message content for "Maximum" configuration

The Maximum configuration is the same as the Configuration 1 System Information on 34.108, section 6 with some differences:

- A different schedule is used. Details below.
- SIB11 lists eight cells (one serving cell and seven neighbouring cells). Only the first two of these are considered relevant. It should also include some of the optional IE's to fit the scheduling information for maximum configuration.
- SIB6 and SIB12 includes ~~all~~ some of the optional IEs even if having same values as correspondent IEs in SIB5 and SIB11 respectively (to fascilitate implementation of the test case for the Maximum configuration) to fit the scheduling information for maximum configuration.

Other characteristics of the Maximum configuration are:

- one "unknown future" block (SIB-F2) is included. This SIB is concatenated with another SIB and is used to verify that the UE can receive an Information Block that it does not support and still process the Information Blocks that it does support in the correct way.
- The test of the segment combination 9 is verified if the UE is able to read SIB7 and the first segment of SIB5 in position 4.
- The test of the segment combination 11 is verified if the UE is able to read the last segment of SIB 5. The SS ensures that this last segment shall have the length between 215 and 222 bits. Depending on the length of SIB 5, the combination 11 occurs either in SIB_position 6, or in the most cases in SIB_position 10

The following tables show (based on SIB_REP and SIB_POS in the MIB and SB) the schedule used for the Maximum configuration.

Table 2: The schedule in this table incorporates segment combinations 1, 2, 3, 5, 6, 8, 9, 11.

Block Type	MIB	SB1	SIB1	SIB2	SIB3	SIB4	SIB5	SIB6	SIB7	SIB11	SIB12	SIB18
SIB_REP	8	16	64	64	64	64	64	64	32	64	64	64
SEG_ COUNT	1	1	1	1	1	1	3	3	1	4	4	1

Frame No / SIB_POS	0	2	4	6	8	10	12	14
Block Type	MIB	SB1	SIB7/ SIB5	SIB5	MIB	SIB5	SIB3/SIB -F2	SIB11

Frame No / SIB_POS	16	18	20	22	24	26	28	30
Block Type	MIB	SB1	SIB11	SIB11	MIB	SIB11/SI B12	SIB12	SIB12

Frame No / SIB_POS	32	34	36	38	40	42	44	46
Block Type	MIB	SB1	SIB7/SIB 18	SIB12	MIB	SIB6	SIB6	SIB6/SIB 2

Frame No / SIB_POS	48	50	52	54	56	58	60	62
Block Type	MIB	SB1	SIB4		MIB	SIB1		

Contents of Master Information Block PLMN type is the case of GSM-MAP

Information Element	Value/remark
- MIB value tag	1
- Supported PLMN types	
- PLMN type	GSM-MAP
- PLMN identity	
- MCC digit	Set to the same Mobile Country Codes stored in the test USIM card (TS 34.108 clause 8.3.2.2 EF IMSI(IMSI)).
- MNC digit	Set to the same Mobile Network Codesstored in the test USIM card (TS 34.108 clause 8.3.2.2 EF IMSI(IMSI)).
- ANSI-41 Core Network information	Not Present
- References to other system information blocks and scheduling blocks	
- References to other system information blocks	
- Scheduling information	
- CHOICE Value tag	Cell Value Tag
- Cell Value tag	1
- Scheduling	
- SEG_COUNT	1
- SIB_REP	16
- SIB_POS	2
- SIB_POS offset info	Not Present – use default
- SIB type	Scheduling Block 1
- Scheduling information	
- CHOICE Value tag	PLMN Value tag
- PLMN Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	58
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 1
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	46
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 2
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	12
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 3
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	52
- SIB_POS offset info	Not Present – use default
- SIB type	System Information Type 4
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	3
- SIB_REP	64
- SIB_POS	4
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	4
- SIB type	System Information Type 5

Contents of Scheduling Block 1 (FDD and TDD 1.28 Mcps option)

Information Element	Value/remark
- References to other system information blocks	
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	3
- SIB_REP	64
- SIB_POS	42
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	2
- SIB and SB type	System Information Type 6
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	32
- SIB_POS	4
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 7
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	4
- SIB_REP	64
- SIB_POS	14
- SIB_POS offset info	
- SIB_OFF	6
- SIB_OFF	2
- SIB_OFF	4
- SIB and SB type	System Information Type 11
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	4
- SIB_REP	64
- SIB_POS	26
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	2
- SIB_OFF	8
- SIB and SB type	System Information Type 12
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	36
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 18
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	12
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type F2

Contents of Scheduling Block 1 (TDD 3.84 Mcps option)

Information Element	Value/remark
- References to other system information blocks	
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	4

- SIB_REP	128
- SIB_POS	3
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	2
- SIB and SB type	System Information Type 6
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	16
- SIB_POS	2
- SIB_POS offset info	Not Present
- SIB type SIBs only	System Information Type 7
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	3
- SIB_REP	64
- SIB_POS	29
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	2
- SIB and SB type	System Information Type 11
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	3
- SIB_REP	64
- SIB_POS	13
- SIB_POS offset info	
- SIB_OFF	2
- SIB_OFF	2
- SIB and SB type	System Information Type 12
- Scheduling information	
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	54
- SIB_POS offset info	Not Present
- SIB type SB	System Information Type 18
- Scheduling information	
- CHOICE Value tag	Not Present
- SEG_COUNT	1
- SIB_REP	64
- SIB_POS	6
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type F2

Contents of System Information Block type F1

Information Element	Value/remark
Data	Arbitrary data with a size of 226 bits

Contents of System Information Block type F2

Information Element	Value/remark
Data	Arbitrary data with a size of 50 bits

NOTE: For these future System Information Block types one of the available spare values for SIB type should be used

Contents of SYSTEM INFORMATION BLOCK TYPE 6 (FDD)

- PICH Power offset	-5 dB
- CHOICE Mode	FDD
- AICH Power offset	-5 dB
- Primary CCPCH info	present
- PRACH system information list	
- PRACH system information	
- PRACH info	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	0
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	Configured
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- CHOICE TFCI signalling	Normal
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfiguration information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0 dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- CHOICE mode	FDD
- Gain factor ßc	11
- Gain factor ßd	15
- Reference TFC ID	0
- CHOICE Mode	FDD
- Power offset Pp-m	0 dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD

- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- ASC Setting	Not Present
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-Channel Number	'1111'B The first/ leftmost bit of the bit string contains the most significant bit of the Assigned Sub-Channel Number.
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	FDD
- Primary CPICH TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	4
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- Secondary CCPCH system information	
- Secondary CCPCH info	
- CHOICE mode	FDD
- Secondary scrambling code	1
- STTD indicator	FALSE
- Spreading factor	64
- Code number	1
- Pilot symbol existence	FALSE
- TFCI existence	TRUE (default value)
- Fixed or Flexible position	Flexible (default value)
- Timing offset	0
- TFCS	(This IE is repeated for TFC number for PCH and FACH.)
- CHOICE TFCI signalling	Normal
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfiguration information	
- CHOICE CTFC Size	4 bit
- CTFC information	0
- Power offset information	Not Present

- CTFC information	1
- Power offset information	Not Present
- CTFC information	2
- Power offset information	Not Present
- CTFC information	3
- Power offset information	Not Present
- CTFC information	4
- Power offset information	Not Present
- CTFC information	5
- Power offset information	Not Present
- CTFC information	6
- Power offset information	Not Present
- CTFC information	8
- Power offset information	Not Present
- FACH/PCH information	
- TFS	(PCH)
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC Size	240
- Number of TB and TTI List	
- Number of Transport blocks	0
- Number of Transport blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	230
- CRC size	16 bit
- Transport Channel Identity	12 (for PCH)
- CTCH indicator	FALSE
- TFS	(FACH)
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC Size	168
- Number of TB and TTI List	
- Number of Transport blocks	0
- Number of Transport blocks	1
- Number of Transport blocks	2
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	220
- CRC size	16 bit
- Transport Channel Identity	13 (for FACH)
- CTCH indicator	FALSE
- TFS	(FACH)
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC Size	360
- Number of TB and TTI List	
- Number of Transport blocks	0
- Number of Transport blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Turbo
- Rate matching attribute	130
- CRC size	16bit
- Transport Channel Identity	14 (for FACH)
- CTCH indicator	FALSE
- PICH info	
- CHOICE mode	FDD
- Channelisation code	2
- Number of PI per frame	18
- STTD indicator	FALSE

- CBS DRX Level 1 information	Not Present

Contents of SYSTEM INFORMATION BLOCK TYPE 11 (FDD)

	- Sib12 Indicator	TRUE
	- FACH measurement occasion info	Present
	- Measurement control system information	
	- Use of HCS	Not used
	- Cell selection and reselection quality measure	CPICH RSCP
	- Intra-frequency measurement system information	
	- Intra-frequency measurement identity	Not Present
		Absence of this IE is equivalent to default value 1
	- Intra-frequency cell info list	
	- CHOICE intra-frequency cell removal	Not present
		(This IE shall be ignored by the UE for SIB11)
	- New intra-frequency cells	
	- Intra-frequency cell id	2
	- Cell info	
	- Cell individual offset	Not present
		Absence of this IE is equivalent to default value 0dB
	- Reference time difference to cell	0
	- Read SFN indicator	FALSE
	- CHOICE mode	FDD
	- Primary CPICH info	
	- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
	- Primary CPICH TX power	Not Present
	- TX Diversity indicator	FALSE
	- Cell Selection and Re-selection info	Present
	- Intra-frequency cell id	1
	- Cell info	
	- Cell individual offset	Not present
		Absence of this IE is equivalent to default value 0dB
	- Reference time difference to cell	0
	- Read SFN indicator	TRUE
	- CHOICE mode	FDD
	- Primary CPICH info	
	- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
	- Primary CPICH TX power	31
	- TX Diversity indicator	FALSE
	- Cell Selection and Re-selection info	Present
	- Intra-frequency cell id	3
	- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
	- Intra-frequency cell id	7
	- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1.4
	- Intra-frequency cell id	8
	- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.8 (FDD)" in clause 6.1.4
	- Cells for measurement	Not Present
	- Intra-frequency measurement quantity	
	- Filter coefficient	Not present
		Absence of this IE is equivalent to the default value 0
	- CHOICE mode	FDD
	- Measurement quantity	CPICH RSCP
	- Intra-frequency reporting quantity for RACH Reporting	Not Present

- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Present
- W	1.0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Not Present
- W	1.0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1c
- Triggering condition 1	Not Present
- Triggering condition 2	Not Present
- Reporting Range Constant	Not Present
- Cells forbidden to affect Reporting range	Not Present

- W	Not Present
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	3
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New inter-frequency cells	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 25.101
- UARFCN downlink(Nd)	Reference to table 6.1.2 for Cell 4
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	0
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.4 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	31
- TX Diversity Indicator	FALSE
- Cell Selection and Re-selection Info	present (same values as for serving cell applies)
- Inter frequency cell id	5
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.5 (FDD)" in clause 6.1.4
- Inter frequency cell id	6
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.6 (FDD)" in clause 6.1.4
- Cell for measurement	Not present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement identity	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE

- Average of RLC Buffer Payload for each RB	FALSE
- Variance of RLC Buffer Payload for each RB	FALSE
- Measurement validity	Not Present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Periodical trigger
- Report Criteria Sys Inf	
- Periodical Reporting Criteria	
- Reporting Amount	Inifinity
- Reporting interval	3000

Contents of SYSTEM INFORMATION BLOCK TYPE 12 (FDD)

- FACH measurement occasion info	Present
- Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not Present Absence of this IE is equivalent to default value 1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	0
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Present
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	0
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4
- Primary CPICH TX power	31
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	Present
- Intra-frequency cell id	3
- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4
- Intra-frequency cell id	7
- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.7 (FDD)" in clause 6.1.4
- Intra-frequency cell id	8
- Cell info	Same content as specified for Intra-frequency cell id=1 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.8 (FDD)" in clause 6.1.4
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	Not present Absence of this IE is equivalent to the default value 0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH Reporting	Not Present
- Maximum number of reported cells on RACH	Not Present

- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	TRUE
- CHOICE mode	FDD
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not Present
- Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Present
- W	1.0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	2
- Replacement activation threshold	Present
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1b
- Triggering condition 1	Active set cells
- Triggering condition 2	Not Present
- Reporting Range Constant	5dB
- Cells forbidden to affect Reporting range	Not Present
- W	1.0
- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	640
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Intra-frequency event identity	1c
- Triggering condition 1	Not Present
- Triggering condition 2	Not Present
- Reporting Range Constant	Not Present
- Cells forbidden to affect Reporting range	Not Present
- W	Not Present

- Hysteresis	0.0
- Threshold Used Frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	3
- Time to trigger	640
- Amount of reporting	4
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cell	Report cell within active set and/or monitored set cells on used frequency
- Maximum number of reported cells	3
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	Not present (This IE shall be ignored by the UE for SIB11)
- New inter-frequency cells	
- Inter frequency cell id	4
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not present Absence of this IE is equivalent to apply the default duplex distance defined for the operating frequency according to 25.101
- UARFCN downlink(Nd)	Reference to table 6.1.2 for Cell 4
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	0
- Read SFN indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.4 (FDD)" in clause 6.1.4
- Primary CPICH Tx power	31
- TX Diversity Indicator	FALSE
- Cell Selection and Re-selection Info	present (same values as for serving cell applies)
- Inter frequency cell id	5
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.5 (FDD)" in clause 6.1.4
- Inter frequency cell id	6
- Frequency info	Not Present Absence of this IE is equivalent to value of the previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4 with the exception that value for Primary scrambling code shall be according to clause titled "Default settings for cell No.6 (FDD)" in clause 6.1.4
- Cell for measurement	Not present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement identity	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE
- Average of RLC Buffer Payload for each RB	FALSE

	- Variance of RLC Buffer Payload for each RB	FALSE
	- Measurement validity	Not Present
	- Measurement Reporting Mode	
	- Measurement Reporting Transfer Mode	Acknowledged mode RLC
	- Periodic Reporting/Event Trigger Reporting Mode	Periodical trigger
	- Report Criteria Sys Inf	
	- Periodical Reporting Criteria	
	- Reporting Amount	Inifinity
	- Reporting interval	8000

8.1.10.1.5 Test requirement

After step 1 the UE shall have a call/session established in Cell 1.

After step 5 the UE shall have a call/session established in Cell 2.

<END OF MODIFIED SECTION>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050299
Agenda 8.8.3

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1100** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF priority 2 (WI-010) RRC test case 8.4.1.14
Source:	⌘	Motorola, Panasonic and MCC 160
Work item code:	⌘	TEI
Date:	⌘	18-Jan-05
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ With the Present power level settings and reporting range constant value, the difference between power levels of cells are so high that for the lowest power level cell (Cell 3), CPICH Ec/Io value will be well below -20 db. As per TS 25.133 clause 8.1.2.2.1, Cell 3 will not be detectable. As a result UE will not perform measurements on Cell 3 and hence not include it in Measurement Reports.

At step 2, the measured CPICH-Ec/Io for Cell 3 in UE will be very close to -20 dB. Considering power level measurement tolerances, a conformant UE many not detect this cell. In this case it will not include Cell 3 measurement in Measurement report

In MEASUREMENT CONTROL (step 7, 7c and 11), IEs unrelated to event 1B are present.

Step 9 is similar to step 7 and hence redundant

Mandatory IE “Reporting quantities for monitored set cells” is incorrectly set to ‘Not Present’ in MEASUREMENT CONTROL message (step 11).

Summary of change: ⌘ Power level of Cells 1, 2 and 3 changed for time instants T0, T1 and T2. New time instant T3 and power levels added .

SCH_Ec set to 0 dB relative to CPICH_Ec

Added a note in specific message contents of step 2 about ‘UE may not include cell C in measurement report’.

Reporting Range for events 1A and 1B is changed.

Steps 9, and 9a are made void.

	Steps 7a, 7d and 11a added. IEs unrelated to event 1B in MEASUREMENT CONTROL in steps 7, 7c and 11 are removed. IE "Reporting quantities for monitored set cells" in MEASUREMENT CONTROL (step 11) is set to Present. Missing power level for Cell 2 for instance T3 added (Correction from T1-050159)
Consequences if not approved:	⌘ Test case fails a conformant UE

Clauses affected:	⌘	8.4.1.14			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.14 Measurement Control and Report: Cell forbidden to affect reporting range (FDD)

8.4.1.14.1 Definition

8.4.1.14.2 Conformance requirement

The reporting range affects the reporting events 1A and 1B. The reporting range is defined as a function of all the Primary CPICHs in the active set. If the parameter W is set to 0, the reporting range is defined relative to the best Primary CPICH. However, there could be cases where it is good to forbid a specific Primary CPICH to affect the reporting range. This mechanism could be effective if the operator knows by experience that the quality of a Primary CPICH is very unstable in a specific area and therefore should not affect the reporting of the other Primary CPICHs.

The UE shall ignore that a Primary CPICH is forbidden to affect the reporting range if all of the following conditions are fulfilled:

- the Primary CPICH is included in active set; and
- all cells in active set are defined as Primary CPICHs forbidden to affect the reporting range.

Reference

3GPP TS 25.331 clause 14.1.2.1, 14.1.2.2, clause 14.1.5.4

8.4.1.14.3 Test Purpose

1. To confirm that the UE reports the triggering of event 1A to the SS, if a primary CPICH currently measured by the UE enters the reporting range.
2. To confirm that the UE reports the triggering of event 1B to the SS, if a primary CPICH currently measured by the UE leaves the reporting range.
3. To confirm that the UE use the forbidden cell indicated in the MEASUREMENT CONTROL message to affect the reporting range.
4. To confirm that the UE ignores that a primary CPICH is forbidden to affect the reporting range when (a) the primary CPICH concerned is included in active set and (b) all cells in the active set are defined as primary CPICHs forbidden to affect the reporting range.

8.4.1.14.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active. SCH_Ec is set to 0 dB relative to CPICH_Ec.

UE: CS-DCCH+DTCH _DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.4.1.14-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.14-1

Parameter	Unit	Cell1				Cell2				Cell3			
		T0	T1	T2	T3	T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel		**Ch. 1**				**Ch. 1**				**Ch. 1**			
CPICH Ec	**dBm/3.84 MHz**	-55	-5055	-55-60	-60	-6260	-6263	-6467	-67	-7668	-6866	-6466	-74

The UE is initially in CELL_DCH state of cell 1.

SS sends a MEASUREMENT CONTROL message with cell 1, cell 2 and cell 3 listed in IE "intra-frequency cell info list". In this message the IE "CHOICE reporting criteria" is set to "intra-frequency measurement report criteria", with the IE "intra-frequency event identity" set to "1A". The IE "reporting range" is set to 13 9 dB in the MEASUREMENT CONTROL message. The UE shall send a MEASUREMENT REPORT on the uplink DCCH, which contains the IE "Event results" to report that intra-frequency event 1A is triggered by cell 2.

SS executes the active set update procedure, requesting that cell 2 be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 2 into its current active set. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1A. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.14-1. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1A. In this message, the IE "Events results" shall indicate that intra-frequency event 1A is triggered by cell 3. SS executes the active set update procedure, requesting that cell 3 be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 3 into its current active set. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1B. The IE "reporting range" is set to 12 7 dB in the MEASUREMENT CONTROL message. SS checks that no measurement report is sent by the UE. SS reconfigures the downlink transmission power settings according to values in column "T2" in table 8.4.1.14-1. SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set to be removed from the "forbidden to affect the reporting range for event 1B" cell list. SS reconfigures the downlink transmission power settings according to values in column "T3" in table 8.4.1.14-1 The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1B. In this message, the IE "Events results" shall indicate that intra-frequency event 1B is triggered by cell 3. SS reconfigures the downlink transmission power settings according to values in column "T2" in table 8.4.1.14-1. ~~SS sends a MEASUREMENT CONTROL message to command that cell 1 in the active set is forbidden to affect the reporting range for event 1B. The IE "reporting range" is set to 12 dB in the MEASUREMENT CONTROL message. SS reconfigures the downlink transmission power settings according to values in column "T1" in table 8.4.1.14-1. SS checks that no measurement report is sent by the UE~~. SS sends a MEASUREMENT CONTROL message to command that all cells in the active set are forbidden to update the reporting range for event 1B. SS reconfigures the downlink transmission power settings according to values in column "T3" in table 8.4.1.14-1. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1B. In these messages, the IE "Events results" shall indicate that intra-frequency event 1B is triggered by cell 3.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		MEASUREMENT CONTROL	UE is initially in CELL_DCH state in cell 1. Cell 1, cell 2 and cell 3 are listed in IE "Intra-frequency cell info list". The IE "CHOICE reporting criteria" is set to "Intra-frequency measurement reporting criteria" and IE "Intra-frequency event identity" is set to "1A" ~~and "1B"~~, with IE "reporting range" set to ~~13~~ 9 dB ~~for both events~~.
2	→		MEASUREMENT REPORT	Measurement made on cell 2 shall trigger event 1A
3	←		ACTIVE SET UPDATE	SS requests UE to add cell 2 into active set.
4	→		ACTIVE SET UPDATE COMPLETE	
5	←		MEASUREMENT CONTROL	SS request UE to monitor cell 3 for event '1A'. SS set cell 1 to be forbidden to affect reporting range. IE "Reporting Range" set to 7 dB.
5a				SS configures the downlink power according to column 'T1' of table 8.4.1.14-1.
6	→		MEASUREMENT REPORT	Measurement made on cell 3 shall trigger event 1A
6a	←		ACTIVE SET UPDATE	SS requests UE to add cell 3 into active set.
6b	→		ACTIVE SET UPDATE COMPLETE	
7	←		MEASUREMENT CONTROL	SS set cell 1 to be forbidden to affect reporting range for event '1B'.
7a			~~Void~~	SS checks that no measurement report is sent by the UE for 20 seconds.
7b				SS configures the downlink power according to column 'T2' of table 8.4.1.14-1.
~~7b~~7c	←		MEASUREMENT CONTROL	Cell 1 shall not be forbidden to affect event '1B'.
7d				SS configures the downlink power according to column 'T3' of table 8.4.1.14-1.
8	→		MEASUREMENT REPORT	Measurement made on cell 3 shall trigger event 1B.
8a				SS configures the downlink power according to column 'T2' of table 8.4.1.14-1.
9	~~←~~		Void~~MEASUREMENT CONTROL~~	~~SS set cell 1 to be forbidden to affect reporting range for event '1B'.~~
9a			Void	~~SS configures the downlink power according to column 'T1' of table 8.4.1.14-1.~~
10	~~→~~		Void	~~SS checks that no measurement report is sent by the UE.~~

11	←	MEASUREMENT CONTROL	SS request UE to monitor cell 3 for event '1B'. SS forbids all cells in active list to affect the reporting range. The SS requests UE to report the CPICH RSCP value of the active set cells.
11a			SS configures the downlink power according to column 'T3' of table 8.4.1.14-1.
12	→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 1)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not present Absence of this IE is equivalent to default value 0dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	
- Intra-frequency cell id	1, 2 and 3
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1a
- Triggering conditions 1	Not Present

- Triggering conditions 2	monitored set cells
- Reporting range	~~13.0~~9.0 dB
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	Infinity
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 2)

NOTE 1: Cell measured results for cell 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 2

ACTIVE SET UPDATE (Step 3)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

ACTIVE SET UPDATE COMPLETE (Step 4 and 6b)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

MEASUREMENT CONTROL (Step 5)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1a
- Triggering conditions 1	Not Present
- Triggering conditions 2	monitored set cells
- Reporting range	~~13.0~~7.0 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	Infinity
- Reporting interval	4000
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

ACTIVE SET UPDATE (Step 6a)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 3
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	2
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

MEASUREMENT CONTROL (Step 7~~ and 9~~)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1b
- Triggering conditions 1	Active set cells
- Triggering conditions 2	Not Present
- Reporting range	~~12.0~~7.0 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- W	0
- Hysteresis	0 dB
~~- Threshold used frequency~~	~~Not Present~~
~~- Reporting deactivation threshold~~	~~3~~
~~- Replacement activation threshold~~	~~Not Present~~
- Time to trigger	0 msec
~~- Amount of reporting~~	~~Infinity~~
~~- Reporting interval~~	~~4000~~
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL (Step 7c~~b~~)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1b
- Triggering conditions 1	Active set cells
- Triggering conditions 2	Not Present
- Reporting range	~~12.0~~10.5 dB
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
~~- Threshold used frequency~~	~~Not Present~~
~~- Reporting deactivation threshold~~	~~3~~
~~- Replacement activation threshold~~	~~Not Present~~
- Time to trigger	0 msec
~~- Amount of reporting~~	~~Infinity~~
~~- Reporting interval~~	~~4000~~
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 8)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	Not Present
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1b'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

MEASUREMENT CONTROL (Step 11)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in Clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	~~Not present~~
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1b
- Triggering conditions 1	Active set cells
- Triggering conditions 2	Not Present
- Reporting range	~~13.0~~10.5 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 2
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 3
- W	0
- Hysteresis	0 dB
- ~~Threshold used frequency~~	~~Not Present~~
- ~~Reporting deactivation threshold~~	~~3~~
- ~~Replacement activation threshold~~	~~Not Present~~
- Time to trigger	0 msec
~~- Amount of reporting~~	~~1~~
- ~~Reporting interval~~	~~0~~
- Reporting cell status	
- CHOICE reported cells	Report cells within active set
- Maximum number of reported cells	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12)

Information Element	Value/remark
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional Measured Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1b'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.14.5 Test requirement

After step 1, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain the IE "Event results" to report that cell 2 has triggered intra-frequency event 1A.

After step 3, the UE shall send a ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 5a, the UE shall transmit MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1A.

After step 6a, the UE shall send a ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 7d~~b~~, the UE shall transmit MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1B.

After step 11a, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1B.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050402

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1101** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Approved RRC Package 3 TC 8.4.1.31
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘ Changes in this revision compared to T1-050192 marked in yellow.

At the 24th of November 2004 TTCN CR T1s040707 was approved, this CR also affected the prose of the TC 8.4.1.31 and this CR introduces the necessary changes.

At step 8 and 9 in the specific message contents GSM carrier RSSI can be present or not. This is because of the alternating Compressed Mode pattern used in this testcase. According to 25.331 clause 8.6.7.6:

1> if the UE has confirmed the BSIC of the measured cell, then:

if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" nor "BSIC re-confirmation" is active and according to its capabilities the UE requires compressed mode to measure this, the UE is not required to include the "inter-RAT cell id" nor "Observed time difference to GSM cell" in the IE "Inter-RAT measured results", when a MEASUREMENT REPORT is triggered. If no compressed mode pattern sequence with measurement purpose "GSM carrier RSSI measurements" is active and according to its capabilities the UE requires compressed mode to measure this, the UE may include "inter-RAT cell id" or "Observed time difference to GSM cell" in MEASUMENT REPORT without "GSM carrier RSSI" even if it is defined in the IE "Inter-RAT reporting quantity".

…..

1> if IE "GSM Carrier RSSI" is set to "TRUE":

2> include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list". If no compressed

		mode pattern sequence specified with measurement purpose "GSM carrier RSSI measurements" is active and according to its capabilities the UE requires compressed mode to measure this, the UE is not required to include the "GSM carrier RSSI" in the IE " Inter-RAT measured results list ", when a MEASUREMENT REPORT is triggered.
Summary of change:	⌘	At step 8 and 9 in the specific message contents GSM carrier RSSI is changed to not checked.
Consequences if not approved:	⌘	TC might fail a conformant UE.

Clauses affected:	⌘	8.4.1.31			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.31 Measurement Control and Report: Inter-RAT measurement in CELL_DCH state.

8.4.1.31.1 Definition

8.4.1.31.2 Conformance requirement

A UE supporting both FDD and GSM shall be able to perform the GSM RSSI measurement and the GSM Initial BSIC identification measurement.

If, according to its capabilities, the UE requires compressed mode to perform GSM RSSI measurements, the UE shall perform GSM RSSI measurements in the gaps of a compressed mode pattern sequence specified for GSM RSSI measurement purpose.

If, according to its capabilities, the UE requires compressed mode to perform GSM Initial BSIC identification measurements, the UE shall perform GSM Initial BSIC identification in a compressed mode pattern sequence specified for Initial BSIC identification measurement purpose.

Reference

3GPP TS 25.133, clause 8.1.2.5; 3GPP TS 25.331, clauses 8.6.7.6, 14.3.2.

8.4.1.31.3 Test Purpose

Purpose of this test is to verify that UE is capable to perform GSM RSSI and GSM Initial BSIC identification measurements.

8.4.1.31.4 Method of test

Initial Condition

System Simulator: 1 UTRAN FDD cell and 2 GSM cells.

Parameter	Unit	Cell 1 (GSM)	Cell 2 (GSM)
Test Channel	#	1	2
RF Signal Level	dBm	-70	-85
BCCH ARFCN	#	1	7
CELL identity	#	0	1
BSIC	#	BSIC1	BSIC2

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

System Information Block type 11 nor 12 does not include Inter-RAT measurement system information.

Related ICS/IXIT statements

- Compressed mode required yes/no

Test Procedure

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure

the compressed mode pattern sequence parameters. Two compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message.

The first RRC: MEASUREMENT CONTROL message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS. Reporting period is 4000 ms.

After two RRC: MEASUREMENT REPORT messages, the SS sends a second RRC: MEASUREMENT CONTROL message to start GSM Initial BSIC identification measurement. The UE replies similarly as in GSM RSSI measurement case but now with a period of 12000ms.

The SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 4.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. If the UE requires compressed mode (refer ICS/IXIT), compressed mode for GSM RSSI measurement is started.
5	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
6	→		MEASUREMENT REPORT	Next periodical measurement report.
7	←		MEASUREMENT CONTROL	SS provides GSM Initial BSIC identification measurement control parameters to UE. If the UE requires compressed mode (refer ICS/IXIT),compressed mode for GSM Intial BSIC identification measurement is started.
8	→		MEASUREMENT REPORT	UE reports measurement results of GSM Initial BSIC identification measurement to SS.
9	→		MEASUREMENT REPORT	Next periodical measurement report.
10	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	15

Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 5 and step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"

- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "7"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't requires compressed mode (refer ICS/IXIT) (Step 5 and step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	12000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Deactivate
- TGCFN	Not present
- TGPSI	2
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 8)

EITHER

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	~~Check to see if present~~Not checked
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

OR

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	~~Check to see if present~~Not checked
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE does not require compressed mode (refer ICS/IXIT) (Step 8)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	~~Check to see if present~~Not checked
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

8.4.1.31.5 Test Requirement

In step 5 and step 6 UE reports correctly GSM RSSI values.

In step 8 and step 9 UE reports correctly BSIC values.

Reporting period is the requested one.

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan - 04 Feb 2005

Tdoc ⌘ T1-050405*(rev.T1-050091)*

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1102** ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Deletion of postamble of switch-off UE and detach in GMM test cases.
Source:	⌘	R&S, MCC task 160
Work item code:	⌘	TEI
Date:	⌘	20/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	According T1#25, AP25.13, the GMM test cases have to be cleaned up to remove the postamble in the expected sequences.
Summary of change:	⌘	For each affected clause delete those lines in the sequence that switched off the UE at the end of the test case.
Consequences if not approved:	⌘	Inconsitency will remain between 34.123-1 and 51.010-1 for GMM tests.

Clauses affected:	⌘	GMM TC in WI-10 and WI-12: 12.2.1.2, 12.2.1.4.1, 12.2.1.4.2, 12.2.1.5a.2, 12.2.1.5b,12.2.1.5d, 12.2.1.6.2, 12.2.1.7, 12.2.1.10, 12.2.2.1, 12.4.1.2, 12.4.1.4b, 12.4.1.4c.1 12.4.1.4.c.2, 12.4.1.4d.2, 12.4.1.5, 12.4.2.1, 12.4.2.2, 12.4.2.4, 12.4.2.5a.2, 12.4.2.6.1, 12.4.2.6.2, 12.4.3.1, 12.4.3.4, 12.5 GMM LP TCs: 12.2.1.5a.4, 12.2.1.5c, 12.2.1.9, 12.2.2.2.1, 12.2.2.2.2, 12.2.2.2.3, 12.2.2.3, 12.2.2.4, 12.2.2.5, 12.2.2.6, 12.2.2.7a, 12.2.2.7b, 12.2.2.7c, 12.2.2.7d, 12.2.2.8, 12.2.2.9, 12.4.1.1b, 12.4.1.8, 12.4.2.3.1, 12.4.2.3.2, 12.4.2.5b, 12.4.2.5c, 12.4.2.5d, 12.4.2.7, 12.4.2.8, 12.4.2.10, 12.4.3.2, 12.4.3.3, 12.9.5 Note: the postamble has not been deleted in the test cases with those exceptions: - If it is mentioned in the test requirements, e.g. TC 12.2.1.1, 12.4.1.1a, 12.2.1.8, 12.4.2.10.1, 12.9.10, 12.7.1, 12.9.2, 12.9.11 - If the DETACH procedure is checked against test purposes, e.g. in TCs 12.3.x,. - If no corresponding GERAN TC exists, e.g. 12.8 - If it is in a test loop, e.g. 12.2.1.3, 12.2.1.5a.1, 12.2.1.6.1, 12.4.1.4a, 12.4.1.6, 12.6.1.1, 12.6.1.2, 12.6.1.3.1, 12.6.1.3.2, 12.9.3, 12.9.4, 12.9.6, 12.9.7a, 12.9.7b, 12.9.7c, 12.9.8, 12.9.9 (on NEC and SEMC comments).

Y | **N**

Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR does not have impact on TTCN. Some comments in TTCN may need to be updated if the removed steps are mentioned there.			

12 Elementary procedure for Packet Switched Mobility Management

12.1 Applicability, default conditions and default messages

All test cases for PS mobility management apply for all PS mobiles unless otherwise stated in a specific test. Within each test case, the ICS statement indicates whether the test shall be performed for mobiles that can only operate in mode - class A, only in mode - class C , or in both mode - class A and C. For some procedures, the mobile class is of no importance.

Note that only the layer 3 messages are described in the document. The mapping of the layer 3 messages to lower layers and the use of logical channels is not described in the present document.

The terms 'PS/CS mode of operation' and 'PS mode of operation' are not used in the present document with some exceptions. Instead the terms 'UE operation mode A' and 'UE operation mode C' are used.

If UE supports mode A and C; the operation mode change from C to A during the test and the resulting signalling caused by the mode change, are out of test scope and up to implementation.

The default conditions and default message contents not specified in this clause must be set as in "PS default conditions"

Below is a list of the RAI values and the corresponding RAC, LAC and MCC used in the test cases:

RAI-1: MCC1/MNC1/LAC1/RAC1 (Used if only one cell)

RAI-2: MCC2/MNC1/LAC1/RAC1

RAI-3: MCC1/MNC1/LAC2/RAC1

RAI-4: MCC1/MNC1/LAC1/RAC2

RAI-5: MCC1/MNC1/LAC1/RAC3

RAI-6: MCC2/MNC1/LAC2/RAC1

RAI-7: MCC2/MNC1/LAC1/RAC2

RAI-8: MCC1/MNC2/LAC1/RAC1

RAI-9: MCC1/MNC2/LAC2/RAC1

RAI10: MCC1/MNC2/LAC1/RAC2

RAI-11: MCC1/MNC3/LAC1/RAC1

RAI-12: MCC1/MNC1/LAC2/RAC2

If the User Equipment initial condition specifies that the mobile has a valid IMSI but the initial condition does not mention P-TMSI, than that shall be interpreted as that the mobile has no valid P-TMSI.

The tests are based on 3GPP TS 24.008.

12.2 PS attach procedure

This procedure is used to indicate for the network that the IMSI is available for traffic by establishment of a GMM context.

12.2.1 Normal PS attach

The normal PS attach procedure is a GMM procedure used by PS UEs of UE operation mode A or C to IMSI attach for PS services only.

12.2.1.1 PS attach / accepted

12.2.1.1.1 Definition

12.2.1.1.2 Conformance requirement

1) If the network accepts the PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.3.1

12.2.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed.

12.2.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI.

2) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS reallocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.

3) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the old P-TMSI.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If this is not supported by the UE, goto step 26.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause: Terminating interactive call
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "paging response"
7a	SS			The SS starts integrity protection and releases the RRC connection.
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to **"**Detach" (message not sent if power is removed).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
9a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
10	UE			The UE is powered up or switched on and initiates an attach (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14			Void	

Step	Direction		Message	Comments
	UE	SS		
14b			Void	
14c	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
14d		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
15	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10 seconds.
17	UE			The UE is switched off or power is removed (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
18a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE			The UE is powered up or switched on and initiates an attach (see ICS).
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.
21	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
22	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause: Terminating interactive call
22a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
22b			Void	
22c			Void	
23	->		SERVICE REQUEST	Service type = "paging response"
23aa		SS		The SS starts integrity protection and releases the RRC connection.
23a			Void	
23b			Void	
24	UE			The UE is switched off or power is removed (see ICS).
24a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

Step	Direction		Message	Comments
	UE	SS		
25a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
26	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25a.

Specific message contents

None.

12.2.1.1.5 Test requirements

At step 2a, 10a and 19a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a and 22a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 8a, 17a and 24a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, 11 and 20, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Mobile identity in the ATTACH REQUEST message and on the Mobile identity in the ATTACH ACCEPT message.

Case 1) The Mobile identity in the ATTACH REQUEST message is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

At step5, UE shall:

- acknowledge the P-TMSI by sending the ATTACH COMPLETE message.

Case 2) The Mobile identity in the ATTACH REQUEST message is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the new P-TMSI.

At step13, UE shall:

- acknowledge the new P-TMSI by sending the ATTACH COMPLETE message.

At step23, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.1.2 PS attach / rejected / IMSI invalid / illegal UE

12.2.1.2.1 Definition

12.2.1.2.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS, the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS, the User Equipment shall delete the LAI.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'illegal MS.

12.2.1.2.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in

MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (in case of UE operation mode A).

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal MS'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
				The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'Illegal MS'.
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			The UE initiates an attach by MMI or by AT command.
10	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
11	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
12	UE			Cell C is preferred by the UE.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
17	UE			The UE is powered up or switched on.
18	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
19	UE			The UE initiates an attach (see ICS).
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.

21	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
22	->	ATTACH COMPLETE	
~~23~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~24~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~25~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, 10, 13 and 15, UE shall:

- not send the ATTACH REQUEST message to SS, even if there is an instruction of attach request from MMI or from AT command.

At step20, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

12.2.1.3 PS attach / rejected / IMSI invalid / PS services not allowed

12.2.1.3.1 Definition

12.2.1.3.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed' (no valid PS-subscription for the IMSI).

12.2.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'GPRS services not allowed'
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
7a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
10	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
13		->	ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
15a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

16			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
17	UE		The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, UE shall:

- not perform a PS attach procedure.

At step11, after the UE is switched on or a USIM is replaced, UE shall:

- perform the PS attach procedure.

12.2.1.4 PS attach / rejected / PLMN not allowed

12.2.1.4.1 Definition

12.2.1.4.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

   1.1 not perform PS attach when switched on in the same routing area or location area (except for the HPLMN).

   1.2 not perform PS attach when in the same PLMN and when that PLMN is not selected manually.

   1.3 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.4 store the PLMN in the 'forbidden PLMN' list.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall perform PS attach when a new PLMN is entered.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' and if after that the PLMN from which this rejection was received, is manually selected, the User Equipment shall perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.4.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PLMN not allowed'.

12.2.1.4.4 Method of test

12.2.1.4.4.1 Test procedure 1

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All four cells are operating in network operation mode II (in case of UE operation mode A). The PLMN of the four cells should NOT be that of the UE Home PLMN.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-8. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same routing area or location area and performs PS attach only when a new PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-8
5		<-	ATTACH REJECT	GMM cause = 'PLMN not allowed'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
7	UE			The UE is switched off.
8		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
9	UE			The UE is powered up or switched on.
10	UE			Cell B is preferred by the UE.
11	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
12		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
15		SS		Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16	UE			Cell D is preferred by the UE.
17	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
18	UE			The UE initiates an attach automatically, by MMI or by AT command.
19		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19a		<-	AUTHENTICATION AND CIPHERING REQUEST	
19b		->	AUTHENTICATION AND CIPHERING RESPONSE	
19c		SS		The SS starts integrity protection.

20	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
21	->	ATTACH COMPLETE	
~~22~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~23~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~24~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

12.2.1.4.4.2 Test procedure 2

Initial condition

System Simurator:

One cell operating in network operation mode II: MCC2/MNC1/LAC1/RAC1 (RAI-2). The PLMN of the cell should NOT be that of the Mobile Station Home PLMN.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The subscribers access rights is changed to allow PS attach. Then the PLMN from which this rejection was received is manually selected and the SS check that a PS attach is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C or A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'PLMN not allowed'
5	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6	UE			The current PLMN is selected manually.
7			Void	
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
9a	<-		AUTHENTICATION AND CIPHERING REQUEST	
9b	->		AUTHENTICATION AND CIPHERING RESPONSE	
9c	SS			The SS starts integrity protection.
10	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
~~12~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~13~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~14~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.1.4.5 Test requirements

Test requirements for test procedure 1

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform PS attach procedure.

UE shall perform the following actions depending on the PLMN or the routing area or the location area

Case 1) UE is in the same routing area or location area when the power is switched on,

At step11, UE shall:

- not perform PS attach procedure.

Case2) UE is in the same PLMN, and this PLMN is not selected manually

At step14, UE shall:

- not perform PS attach procedure.

Case3) UE is in a new PLMN.

At step19, UE shall:

- perform the PS attach procedure.

Test requirements for test procedure 2

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, UE shall:

- not perform PS attach procedure.

At step9, when the UE is in the new PLMN, and this PLMN is selected manually, UE shall

- perform the PS attach procedure.

12.2.1.5a PS attach / rejected / roaming not allowed in this location area

12.2.1.5a.1 Definition

12.2.1.5a.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment shall:

   1.1 not perform PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for roaming' list.

   1.4 perform PS attach when a new location area is entered.

   1.5 Periodically search for its HPLMN.

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

3) The UE shall be capable of storing at least 10 entries in the list of 'Forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5a.3 Test purpose

Test purpose 1

To test that on receipt of a rejection using the 'roaming not allowed in this location area' cause code, the UE ceases trying to attach on that location area. Successful PS attach procedure is possible in other location areas.

Test purpose 2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

Test purpose 3

To test that at least 6 entries can be held in the list of 'forbidden location areas for roaming' (the requirement in 3GPP TS 24.008 is to store at least 10 entries. This is not fully tested by the third procedure).

Test purpose 4

To test that if a cell of the Home PLMN is available then the UE returns to it in preference to any other available cell.

12.2.1.5a.4 Method of test

12.2.1.5a.4.1 Test procedure 1

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in

MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN) and cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN).

All three cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. A new attempt for a PS attach is not possible. Successful PS attach / detach procedures are performed in another location area. A new attempt for a PS attach is performed in the 1st location area. This attempt shall not succeed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6
13		->	ATTACH COMPLETE	
13a		SS		The SS releases the RRC connection.
14	UE			The UE initiates a PS detach (without power off) by MMI or by AT command .
14a		SS		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
15		->	DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
16		<-	DETACH ACCEPT	
16a		SS		The SS releases the RRC connection.

17	SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE		Cell C is preferred by the UE.
19	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds). The UE is switched off or power is removed (see ICS)
20	UE		UE is switched off.
21	SS		Set the cell type of cell C to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A if supported (see ICS) and the test is repeated from step 2 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

12.2.1.5a.4.2 Test procedure 2

Initial condition

System Simulator:

One cell in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN) operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 s and switched on again. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

If USIM removal is possible without switching off: The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
2b	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
5	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
5a	SS			The SS releases the RRC connection.
6	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
7	UE			The UE is powered up or switched on and initiates an attach (see ICS).
8				
8a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
8b	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
9a	<-		AUTHENTICATION AND CIPHERING REQUEST	
9b	->		AUTHENTICATION AND CIPHERING RESPONSE	
9c	SS			The SS starts integrity protection.
10	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
11a	SS			The SS releases the RRC connection.
~~12~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~12a~~	~~SS~~			~~SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.~~
~~12b~~			~~Void~~	
~~13~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~14~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

12.2.1.5a.4.3 Test procedure 3

Initial condition

System Simulator:

Six cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-3, Not HPLMN), cell C in MCC2/MNC1/LAC3/RAC1 (Not HPLMN), cell D in MCC2/MNC1/LAC4/RAC1 (Not HPLMN), cell E in MCC2/MNC1/LAC5/RAC1 (Not HPLMN), cell F in MCC2/MNC1/LAC6/RAC1 (Not HPLMN).
All six cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. This is done for 6 different location areas. Then the SS checks that the UE does not attempt to perform an attach procedure on the non-allowed location areas.

Different types of UE may use different methods to periodically clear the list of forbidden areas (e.g. every day at 12am) for roaming. If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
2	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
12		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
13	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell C.
14		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
15	UE			Cell C is preferred by the UE.

Step	Direction		Message	Comments
	UE	SS		
16	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
17a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
20	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
21a	SS			The SS releases the RRC connection.
21	SS			Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
22	UE			Cell D is preferred by the UE.
23	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
24	UE			The UE initiates an attach automatically, by MMI or by AT command.
24a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
25	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
27	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
27a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
				The following messages are sent and shall be received on cell E.
28	SS			Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Serving cell". (see note)
29	UE			Cell E is preferred by the UE.
30	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
31	UE			The UE initiates an attach automatically, by MMI or by AT command.
31a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
32	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
33	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
34	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
34a	SS			The SS releases the RRC connection.
				The following messages are sent and shall be received on cell F.

Step	Direction		Message	Comments
	UE	SS		
35		SS		Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Serving cell". (see note)
36	UE			Cell F is preferred by the UE.
37	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
38	UE			The UE initiates an attach automatically, by MMI or by AT command.
38a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
39	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
40	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
41	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
41a		SS		The SS releases the RRC connection.
42		SS		The following messages are sent and shall be received on cell E. Set the cell type of cell E to the "Serving cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
43		SS		Cell E is preferred by the UE.
44	UE			The UE initiates an attach automatically, by MMI or by AT command.
45	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
46		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell C to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
47		SS		Cell C is preferred by the UE.
48	UE			The UE initiates an attach automatically, by MMI or by AT command.
49	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
50		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
51		SS		Cell A will be preferred by the UE.
52	UE			The UE initiates an attach automatically, by MMI or by AT command.
53	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

12.2.1.5a.4.4 Test procedure4

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (not HPLMN, RAI-2) and cell B in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1).

Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. A second cell belonging to the HPLMN is activated. It is checked that the UE returns to its HPLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	UE			The UE initiates an attach automatically, by MMI or by AT command.
9a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
10		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
10a		<-	AUTHENTICATION AND CIPHERING REQUEST	
10b		->	AUTHENTICATION AND CIPHERING RESPONSE	
10c		SS		The SS starts integrity protection.
11		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
12		->	ATTACH COMPLETE	
12a		->		The SS releases the RRC connection.
~~13~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~13a~~		~~SS~~		~~SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.~~
~~13b~~			~~Void~~	
~~14~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~

	~~15~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.1.5a.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform the PS attach procedure.

At step11, when the new location area is entered, UE shall:

- perform the PS attach procedure

At step19, when the rejected location area is entered, UE shall

- not perform PS attach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step9, when the UE is switched off or USIM is replaced, UE shall:

- perform the PS attach procedure.

Test requirements for Test procedure3

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, 13, 20, 27, 34 and 41, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step11, 18, 25, 32 and 39 , UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step45, 49 and 53, UE shall:

- not perform PS attach procedure.

Test requirements for Test procedure4

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step10, when a new location area is entered, UE shall:

- perform the PS attach procedure.

12.2.1.5b PS attach / rejected / No Suitable Cells In Location Area

12.2.1.5b.1 Definition

12.2.1.5b.2 Conformance requirement

(1) If the network rejects a PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 not perform PS attach when in the same location area.

1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

1.3 store the LA in the 'forbidden location areas for roaming' list.

1.4 not delete the list of "equivalent PLMNs".

1.5 perform PS attach when a new location area is entered.

Reference

3GPP TS 24.008 clauses 4.7.3.1.

12.2.1.5b.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'No Suitable Cells In Location Area'.

12.2.1.5b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6)

All three cells are operating in network operation mode II.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the equivalent PLMN and shall perform PS attach procedure in that cell.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-suitable cell". Set the cell type of cell C to the "Non-suitable cell". (see note)
3			Void	
3a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9			Void	
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11	<-		ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
12		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell C.
13	UE		Registration on CS	See TS 34.108
14	UE			The UE initiates an attach automatically, by MMI or by AT command.
14a				SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
16	<-		AUTHENTICATION AND CIPHERING REQUEST	
17	->		AUTHENTICATION AND CIPHERING RESPONSE	
18		SS		The SS starts integrity protection.
19	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20	->		ATTACH COMPLETE	

20a	SS		The SS releases the RRC connection.
~~21~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~21a~~	~~SS~~		~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~22~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'~~
~~23~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5b.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step15, when the UE enters a suitable cell in a different location area on the equivalent PLMN, UE shall:

- perform the PS attach procedure.

12.2.1.5c PS attach / rejected / Location area not allowed

12.2.1.5c.1 Definition

12.2.1.5c.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 reset the attach attempt counter.

   1.4 store the LAI in the list of "forbidden location areas for regional provision of service".

   1.1 perform a cell selection.

   1.2 not delete the list of "equivalent PLMNs".

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' and if the User Equipment is IMSI attached via MM procedures the User Equipment shall:

   2.1 set the update status to U3 ROAMING NOT ALLOWED.

   2.2 delete any TMSI, LAI and ciphering key sequence number.

   2.3 reset the location update attempt counter.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Location area not allowed'.

12.2.1.5c.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Location area not allowed'. The SS checks that the UE does not perform MM IMSI attach while in the same location area and performs PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			If UE operation mode A is supported, If UE operation mode C is supported, the UE is set in UE operation mode A (see ICS). If UE operation mode A is not supported, the UE is set in UE operation mode C.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
3a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
4a	->		AUTHENTICATION AND CIPHERING REQUEST	
4b	<-		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note) The SS configures power level of each Cell as follows. Cell A > Cell B > Cell C
9			Void	
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'Location area not allowed'
11a		SS		The SS releases the RRC connection.
12		UE		The UE performs cell selection. The following messages are sent and shall be received on cell C.
12a		UE	Registration on CS	See TS 34.108. This is applied only for UE in UE operation mode A.
12b		UE		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Registration”
13	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	

16	SS		The SS starts integrity protection.
17	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
18	->	ATTACH COMPLETE	
19	UE		No MM IMSI attach request sent to SS (SS waits 30 seconds).
19a	SS		The SS releases the RRC connection.
~~20~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~20a~~	~~SS~~		~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~20b~~	~~UE~~	~~Detach on CS~~	~~This is applied only for UE in UE operation mode A.~~
~~21~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~22~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5c.5 Test requirements

At step4 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform cell selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI.

At step19, UE shall:

- not perform MM IMSI attach

12.2.1.5d PS attach / rejected / PS services not allowed in this PLMN

12.2.1.5d.1 Definition

12.2.1.5d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

1.4 perform a PLMN selection instead of a cell selection, if the UE is in UE operation mode C.

2) If the UE is in UE operation mode A or B and the network is in network operation mode II the User Equipment shall:

2.1 be still IMSI attached for CS services in the network..

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.2.1.5d.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = GPRS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1
5	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c		SS		The SS starts integrity protection.
6	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note)
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
12	UE			The UE performs PLMN selection. The following messages are sent and shall be received on cell C.
13	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
18	->		ATTACH COMPLETE	
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20			Void	
21	->		RRC CONNECTION REQUEST	
22	<-		RRC CONNECTION SETUP	

23	->	RRC CONNECTION SETUP COMPLETE	
24	->	PAGING RESPONSE	
25	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
26	->	RRC CONNECTION RELEASE COMPLETE	
~~27~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~28~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~29~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform PLMN selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step21, UE shall:

- respond the Paging for CS domain service.

12.2.1.6 PS attach / abnormal cases / access barred due to access class control

12.2.1.6.1 Definition

12.2.1.6.2 Conformance requirement

1) The UE shall not perform PS attach procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the PS attach procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (Cell is changed).

12.2.1.6.4 Method of test

12.2.1.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred.

System Simulator:

One cell operating in network operation mode II.
Access class x barred.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

The SS indicates that access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 12.
3	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
4	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
5	SS			The access class x is not barred anymore.
6	UE			The UE initiates a PS attach either automatically or manually (see ICS).
7	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
9	->		ATTACH COMPLETE	
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	SS			The SS is set in network operation mode II.
13	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 11.

12.2.1.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell A.

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred.
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid P-TMSI-2 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
		SS		The following messages are sent and shall be received on cell A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is set in UE operation mode C (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			The UE initiates an attach either automatically or manually (see ICS).
8		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
8a		<-	AUTHENTICATION AND CIPHERING REQUEST	
8b		->	AUTHENTICATION AND CIPHERING RESPONSE	
8c	SS			The SS starts integrity protection.
9		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
10		->	ATTACH COMPLETE	
~~11~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~12~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~13~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.1.6.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step7, when the UE access class x is granted, UE shall:

initiate the PS attach procedure.

Test requirements for Test procedure2

At step5, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step8, when the serving cell is changed, UE shall:

- initiate the PS attach procedure.

12.2.1.7 PS attach / abnormal cases / change of routing area

12.2.1.7.1 Definition

12.2.1.7.2 Conformance requirement

If a cell change into a new routing area occurs before an ATTACH ACCEPT or ATTACH REJECT message has been received, the GPRS attach procedure shall be aborted and re-initiated immediately.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.7.4 Method of test

Initial condition

System Simulator:

One cell with MCC1/MNC1/LAC1/RAC1 (RAI-1)
The cell is operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The ATTACH ACCEPT message is delayed from the SS. The UE receive a new routing area code. The UE shall re-initiate a PS attach procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5	SS			No response to the ATTACH REQUEST message is given by the SS.
6			Void	
6a		<-	UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code. Note: SS transmits the updated system information with the new RAI information in SIB1
6b		->	UTRAN MOBILITY INFORMATION CONFIRM	
7	UE			The UE automatically re-initiates the attach.
8		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
8a		<-	AUTHENTICATION AND CIPHERING REQUEST	
8b		->	AUTHENTICATION AND CIPHERING RESPONSE	
8c	SS			The SS starts integrity protection.
9		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-4
~~10~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~11~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~11a~~				~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

UTRAN MOBILITY INFORMATION (step 6a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	Infinity
- ATT	0
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	1 (Network Mode of Operation II)
- CN domain specific DRX cycle length coefficient	7

12.2.1.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected sequence.

At step8, as the UE has received a new RAI in the UTRAN MOBILITY INFORMATION message before the ATTACH ACCEPT message or the ATTACH REJECT message is received by the UE, the UE shall:

- abort the PS attach procedure and re-initiate the PS attach procedure immediately with new information elements.

12.2.1.8 PS attach / abnormal cases / power off

12.2.1.8.1 Definition

12.2.1.8.2 Conformance requirement

When power is switched off before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and perform a PS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.

12.2.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.8.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE is switched off after initiating an attach procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 7.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	SS			No response to the ATTACH REQUEST message is given by the SS.
5	UE			The UE is powered off and initiates a PS detach (with power off) by
6	->		DETACH REQUEST	Detach type = 'power switched off, GPRS detach'
7	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 6.

Specific message contents

None.

12.2.1.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when power is switched off before ATTACH ACCEPT message is received, UE shall:

- abort the PS attach procedure and perform the PS detach procedure.

12.2.1.9 PS attach / abnormal cases / PS detach procedure collision

12.2.1.9.1 Definition

12.2.1.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message, the UE shall terminate the PS attach procedure and continue with the PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message, the UE shall ignore the PS detach procedure and continue with the PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (any cause except re-attach). The UE shall terminate the PS attach procedure and continue with the PS detach procedure**.**

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (cause re-attach). The UE shall ignore the PS detach procedure and continue with the PS attach.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7	UE			The UE initiates the attach procedure by MMI or AT command.
8	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
9	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach required'
11	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
~~14~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~15~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~16~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type in the DETACH REQUEST message.

Case1) Detach type = 're-attach not required' GMM cause is not re-attach

At step6, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- terminate the PS attach procedure and continue with the PS detach procedure.

Case2) Detach type = 're-attach required'

At step11, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- ignore the PS detach procedure and continue with the PS attach procedure.

12.2.1.10 PS attach / abnormal cases / Failure due to non-integrity protection

12.2.1.10.1 Definition

12.2.1.10.2 Conformance requirement

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

- GMM messages:
  - AUTHENTICATION & CIPHERING REQUEST
  - AUTHENTICATION & CIPHERING REJECT
  - IDENTITY REQUEST
  - ATTACH REJECT
  - ROUTING AREA UPDATE ACCEPT (at periodic routing area update with no change of routing area or temporary identity)
  - ROUTING AREA UPDATE REJECT
  - SERVICE REJECT
  - DETACH ACCEPT (for non power-off)

Reference(s):

3GPP TS 24.008 clause 4.1.1.1.1

12.2.1.10.3 Test purpose

To verify that the UE ignores NAS signalling messages when the security mode procedure is not activated.

12.2.1.10.4 Method of test

Initial Conditions

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid IMSI.

Related ICS Statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No

Test procedure

The attach procedure is initiated. Upon reception of ATTACH REQUEST message from the UE, the SS responds with an ATTACH ACCEPT message without the integrity protection. The UE shall ignore this message and re-transmit ATTACH REQUEST message at expiry of timer T3310.

This time the SS starts the authentication procedure and initiates the integrity protection. After receiving ATTACH ACCEPT message, the UE shall respond to ATTACH COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach procedure (see ICS).
3	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7	SS			The SS does not initiate the security mode procedure.
8	<-		ATTACH ACCEPT	
9	UE			The UE ignores ATTACH ACCEPT message.
10	SS			The SS waits 15 sec (T3310).
11	->		ATTACH REQUEST	The UE re-transmits the message. The SS verifies that the period of time between the ATTACH REQUEST messages corresponds to the value of T3310. Attach type = 'GPRS attach' Mobile identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
13	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
14	SS			The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Mobile identity = P-TMSI
16	->		ATTACH COMPLETE	
~~17~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~18~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~19~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific Message Contents

None.

12.2.1.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall;

- ignore the first ATTACH ACCEPT message.

At step11, UE shall;

- re-transmit ATTACH REQUEST message after expiry of timer T3310.

At step16, UE shall;

- respond to ATTACH COMPLETE message after the UE receives the second ATTACH ACCEPT message.

12.2.2 Combined PS attach

12.2.2.1 Combined PS attach / PS and non-PS attach accepted

12.2.2.1.1 Definition

12.2.2.1.2 Conformance requirement

1) If the network accepts the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI, the UE shall continue communication with the previously used P-TMSI.

4) If the network accepts the combined PS attach procedure and determines that IMSI shall be used in CS operations, the UE shall continue communication with the IMSI for CS operations.

5) If the network accepts the combined PS attach procedure and determines that a TMSI shall be used in CS operations, the UE shall continue communication with the TMSI for CS operations.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed;

4) Mobile terminating CS call is allowed with IMSI;

5) Mobile terminating CS call is not allowed with TMSI.

12.2.2.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I. ATT flag is set to 0.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used.

2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

3) The UE is PS paged in order to verify that the new P-TMSI is used for PS services.

4) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS allocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI and a new TMSI. The UE acknowledge the P-TMSI and the TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the new TMSI is used. The UE is CS paged in order to verify that the new TMSI is used for CS services.

5) The UE is PS paged in order to verify that the new P-TMSI is used for PS services. The UE will not answer signalling addressed to the old P-TMSI.

6) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the previously used P-TMSI.

7) The UE is PS paged in order to verify that the previously used P-TMSI is used for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity =IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
7	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
8			Void	
9			Void	
10	->		PAGING RESPONSE	Mobile identity = IMSI
11	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
13a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
13b			Void	
13c			Void	
14	->		SERVICE REQUEST	service type = "paging response"
14aa	SS			The SS starts integrity protection.
14a	SS			The SS releases the RRC connection.
14b			Void	
15	UE			The UE is switched off or power is removed (see ICS).
15a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
16a	SS			If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

Step	Direction		Message	Comments
	UE	SS		
17	UE			The UE is powered up or switched on and initiates an attach (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 TMSI status = no valid TMSI available Old Routing area identity = RAI-1
18a	<-		AUTHENTICATION AND CIPHERING REQUEST	
18b	->		AUTHENTICATION AND CIPHERING RESPONSE	
18c		SS		The SS starts integrity protection.
19	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
20	->		ATTACH COMPLETE	
21			Void	
21b			Void	
21c		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
22	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
23		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
24			Void	
25			Void	
26	->		PAGING RESPONSE	Mobile identity = TMSI-1
27		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
28			Void	
29	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
29a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
29b			Void	
29c			Void	
30	->		SERVICE REQUEST	service type = "paging response"
30aa		SS		The SS starts integrity protection.
30a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
30b			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
32	UE			No response from the UE to the request. This is checked for 10 seconds.
33	UE			The UE is switched off or power is removed (see ICS).
33a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
34	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'

Step	Direction		Message	Comments
	UE	SS		
34a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
35	UE			The UE is powered up or switched on and initiates an attach (see ICS).
35a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
36	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present
36a	<-		AUTHENTICATION AND CIPHERING REQUEST	
36b	->		AUTHENTICATION AND CIPHERING RESPONSE	
36c		SS		The SS starts integrity protection.
37	<-		ATTACH ACCEPT	No new mobile identity assigned. TMSI and P-TMSI not included. Attach result = 'Combined GPRS/IMSI attached' P-TMSI-3 signature Routing area identity = RAI-1
37a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
38	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
38a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
38b			Void	
38c			Void	
39	->		SERVICE REQUEST	service type = "paging response"
39aa		SS		The SS starts integrity protection.
39a		SS		The SS releases the RRC connection.
39b			Void	
~~40~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~40a~~		~~SS~~		~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~41~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~42~~		~~SS~~		~~If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~

Specific message contents

None.

12.2.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

Case 1) SS accept the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI.

At step5, UE shall

- send the ATTACH COMPLETE message.

At step10, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step14, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 2) SS accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI and TMSI.

At step20, UE shall:

- send the ATTACH COMPLETE message.

At step26, when the UE receives the paging message for CS domain with Mobile identity = TMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step30, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 3) SS accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI.

At step39, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.2 Combined PS attach / PS only attach accepted

12.2.2.2.1 Definition

12.2.2.2.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.2.3 Test purpose

Test purpose1

To test the behaviour of the UE if the network accepts the PS attach procedure with indication PS only, GMM cause 'IMSI unknown in HLR'.

Test purpose2

To test the behaviour of the UE which does not support an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

Test purpose 3

To test the behaviour of the UE which supports an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.2.2.2.4 Method of test

12.2.2.2.4.1 Test procedure1

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature GMM cause = 'IMSI unknown in HLR' Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
~~8~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~9~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~10~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

12.2.2.2.4.2 Test procedure2

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is

repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ATTACH COMPLETE	
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-2 signature Old Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-3 signature Old Routing area identity = RAI-1
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-4 signature Old Routing area identity = RAI-1
13	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)

Step	Direction		Message	Comments
	UE	SS		
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-5 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
18-20			(void)	
~~21~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~22~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'.~~ ~~Stop the sequence.~~
~~23~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

12.2.2.2.4.3 Test procedure 3

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-2 signature Old Routing area identity = RAI-1
6	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-3 signature Old Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-4 signature Old Routing area identity = RAI-1
10	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-5 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
13		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
15	UE			An automatic MM IMSI attach procedure is initiated.
16	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI Steps 4917 - 5523 are only performed if the UE has performed the Registration Procedure in step 4116.
17		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18		->	RRC CONNECTION REQUEST	
19		<-	RRC CONNECTION SETUP	
20		->	RRC CONNECTION SETUP COMPLETE	
21		->	PAGING RESPONSE	Mobile identity = TMSI-1
22		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23		->	RRC CONNECTION RELEASE COMPLETE	
~~24~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~25~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~26~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.2.2.5 Test requirements

Test requirements for Test porpose1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test porpose2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, 10, 12 and 16, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

Test requirements for Test porpose3

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step5, 7, 9 and 11, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

At step16, UE shall:

- perform MM location updating procedure.

At step21, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.2.2.3 Combined PS attach / PS attach while IMSI attach

12.2.2.3.1 Definition

12.2.2.3.2 Conformance requirement

If the PS UE is already attached for non-PS services by the MM specific attach procedure, but wants to perform an attach for PS services, the combined PS attach procedure is performed.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.3.3 Test purpose

To test the behaviour of the UE if PS attach performed while IMSI attached.

12.2.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I. ATT flag is set.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE is forced to register for CS services but not to PS services. The SS verifies that the UE does not respond to paging messages for PS domain. Then the UE is triggered to perform the PS attach procedure and the SS verifies that it responds to PS paging messages.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS) and configured not to perform an automatic PS attach at switch on.
2	UE			The UE is powered up or switched on. No PS attach is performed (see ICS).
3			Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-1
4		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
5	UE			No response from the UE to the request. This is checked for 10 seconds.
6	UE			The UE is triggered to perform a PS attach.
7		->	ATTACH REQUEST	Attach type = 'GPRS attach while IMSI attached' or 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
7a		<-	AUTHENTICATION AND CIPHERING REQUEST	
7b		->	AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' No new mobile identity assigned. TMSI and P-TMSI not included P-TMSI-2 signature Routing area identity = RAI-1
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		->	RRC CONNECTION REQUEST	
11		<-	RRC CONNECTION SETUP	
12		->	RRC CONNECTION SETUP COMPLETE	
13		->	SERVICE REQUEST	service type = "paging response"
14		<-	RRC CONNECTION RELEASE	
15		->	RRC CONNECTION RELEASE COMPLETE	
~~16~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~17~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~18~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.2.3.5 Test requirements

UE is already attached for non-PS service with the MM specific attach procedure.

At step5, UE shall:

- not respond to the paging message for PS domain.

At step7, when the UE is requested to attach for PS services, UE shall:

- perform the combined PS attach procedure.

At step13, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.4 Combined PS attach / rejected / IMSI invalid / illegal ME

12.2.2.4.1 Definition

12.2.2.4.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'Illegal ME'.

12.2.2.4.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1(RAI-2).
All three cells are operating in network operation mode I.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
5		<-	ATTACH REJECT	GMM cause 'Illegal ME'.
6	UE		PAGING TYPE1	Mobile identity = TMSI-1Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
9	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE			Cell C is preferred by the UE.
19	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
20		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services
21	UE			No response from the UE to the request. This is checked for 10 seconds.
22	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
24	UE			Step 25 is only performed for non-auto attach UE. A location updating procedure is initiated.
25	UE		Registration on CS	See TS34.108 Parameter Mobile identity is IMSI.
26	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
27	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
27a	<-		AUTHENTICATION AND CIPHERING REQUEST	
27b	->		AUTHENTICATION AND CIPHERING RESPONSE	
27c	SS			The SS starts integrity protection.
28	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signatureMS identity = TMSI-1 Routing area identity = RAI-2
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-2
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
~~37~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~38~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~39~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.4.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, 9 and 16, when the UE receives the paging message for CS domain, UE shall,

- not respond to the paging message for CS domain.

At step11 and 21, when the UE receives the paging message for PS domain, UE shall,

- not respond to the paging message for PS domain.

At step27, when the USIM is replaced, UE shall:

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain, UE shall,

- respond to the paging message for CS domain by sending the RAGING RESPONSE message.

12.2.2.5 Combined PS attach / rejected / PS services and non-PS services not allowed

12.2.2.5.1 Definition

12.2.2.5.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services and non-GPRS services not allowed', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services and non-GPRS services not allowed', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'GPRS services and non-GPRS services not allowed'.

12.2.2.5.4 Method of test

Initial condition

System Simulator:

- Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
  Both cells are operating in network operation mode I.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

- The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services and non-GPRS services not allowed'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'GPRS services and non-GPRS services not allowed'
6	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS Paging.
10	UE			No response from the UE to the request. This is checked for 10 seconds
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12			(void)	
13	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
15	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
16	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
17	UE			No response from the UE to the request. This is checked for 10seconds.
18	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
19	UE			The UE is powered up or switched.
20	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is IMSI.
21	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
22	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c	SS			The SS starts integrity protection.

Step	Direction		Message	Comments
	UE	SS		
23		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
24		->	ATTACH COMPLETE	
25		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
26		->	RRC CONNECTION REQUEST	
27		<-	RRC CONNECTION SETUP	
28		->	RRC CONNECTION SETUP COMPLETE	
29		->	PAGING RESPONSE	Mobile identity = TMSI-1
30		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31		->	RRC CONNECTION RELEASE COMPLETE	
32		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services.
33		->	RRC CONNECTION REQUEST	
34		<-	RRC CONNECTION SETUP	
35		->	RRC CONNECTION SETUP COMPLETE	
36		->	SERVICE REQUEST	Service type = "paging response"
37		<-	RRC CONNECTION RELEASE	
38		->	RRC CONNECTION RELEASE COMPLETE	
~~39~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~40~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~41~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8 and 14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 17, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step22, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure.

At step29, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step36, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.6 Combined PS attach / rejected / PS services not allowed

12.2.2.6.1 Definition

12.2.2.6.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) A PS class AUE shall perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.6.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed'.

12.2.2.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode I.
ATT flag set to 1

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach. PS services are not possible. An UE operation mode A UE shall perform an MM IMSI attach.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on.
2a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
2b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4	<-		ATTACH REJECT	GMM cause 'GPRS services not allowed'
5	UE			An automatic MM IMSI attach procedure is initiated.
6	UE		Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-2.
7	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
8	->		RRC CONNECTION REQUEST	
9	<-		RRC CONNECTION SETUP	
10	->		RRC CONNECTION SETUP COMPLETE	
11	->		PAGING RESPONSE	Mobile identity = TMSI-2
12	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signaling link.
13	->		RRC CONNECTION RELEASE COMPLETE	
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			A location updating procedure is initiated.
17	UE		Registration on CS	See TS 34.108 Location updating type = normal. The SS allocates TMSI-1.
18	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
19	->		RRC CONNECTION REQUEST	
20	<-		RRC CONNECTION SETUP	
21	->		RRC CONNECTION SETUP COMPLETE	
22	->		PAGING RESPONSE	Mobile identity = TMSI-1
23	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
24	->		RRC CONNECTION RELEASE COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services
26	UE			No response from the UE to the request. This is checked for 10seconds.
27	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
27a	UE			If switch off is performed then UE performs IMSI detach procedure.
28	UE			The UE is powered up or switched.
28a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
28b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
29	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI
29a	<-		AUTHENTICATION AND CIPHERING REQUEST	
29b	->		AUTHENTICATION AND CIPHERING RESPONSE	
29c	SS			The SS starts integrity protection.
30	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-2 Routing area identity = RAI-2
31	->		ATTACH COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		PAGING RESPONSE	Mobile identity = TMSI-2
37	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
38	->		RRC CONNECTION RELEASE COMPLETE	
~~39~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~40~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~41~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, if the UE is PS class A, UE shall:

- perform the MM IMSI attach procedure.

At step11, 22 and 36, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step29, UE shall:

- perform the PS attach procedure.

12.2.2.7a Combined PS attach / rejected / location area not allowed

12.2.2.7a.1 Definition

12.2.2.7a.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

   1.4 not delete the list of "equivalent PLMNs".

   1.5 perform a cell selection.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   2.1 perform combined PS attach when a new location area is entered.

   2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.2.2.7a.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All cells are operating in network operation mode I.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		->	ATTACH REQUEST	Attach type = 'Combined GPRS/ IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3b		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
3c		<-	DETACH REQUEST	Detach type = re-attach required
3d		->	DETACH ACCEPT	
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause 'Location Area not allowed'
6	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7		<-	PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		->		No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
11a	UE			The UE performs cell selection.
12	UE			Cell B is preferred by the UE.
13	UE			No ATTACH REQUEST or LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10seconds.
17	UE			The UE initiates an attach by MMI or AT command.
18				No attach is performed by the UE. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.

Step	Direction		Message	Comments
	UE	SS		
19		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19a		UE		The UE performs cell selection
20		UE		Cell C is preferred by the UE. Step 20a and 20b are only performed by an UE which will not initiate a PS attach automatically (see ICS)
20a conditional		UE	Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
20b conditional		UE		UE initiates an attach via MMI or AT commands.
21	->		ATTACH REQUEST	Attach type = 'Combined GPRS/ IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->		RRC CONNECTION REQUEST	
26	<-		RRC CONNECTION SETUP	
27	->		RRC CONNECTION SETUP COMPLETE	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->		RRC CONNECTION RELEASE COMPLETE	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32	->		RRC CONNECTION REQUEST	
33	<-		RRC CONNECTION SETUP	
34	->		RRC CONNECTION SETUP COMPLETE	
35	->		SERVICE REQUEST	Service type = "paging response"
36	<-		RRC CONNECTION RELEASE	
37	->		RRC CONNECTION RELEASE COMPLETE	
38		UE		The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
39a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.

Step	Direction		Message	Comments
	UE	SS		
40	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
41	UE			The UE is powered up or switched on and initiates an attach (see ICS).
42				Step 43 is only performed for non-auto attach UE.
43	UE		Registration on CS	See TS 34.108
44	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
45	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6
45a	<-		AUTHENTICATION AND CIPHERING REQUEST	
45b	->		AUTHENTICATION AND CIPHERING RESPONSE	
45c	SS			The SS starts integrity protection.
46	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
47	->		ATTACH COMPLETE	
48	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
49	->		RRC CONNECTION REQUEST	
50	<-		RRC CONNECTION SETUP	
51	->		RRC CONNECTION SETUP COMPLETE	
52	->		PAGING RESPONSE	Mobile identity = TMSI-2
53	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
54	->		RRC CONNECTION RELEASE COMPLETE	
55	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
56	->		RRC CONNECTION REQUEST	
57	<-		RRC CONNECTION SETUP	
58	->		RRC CONNECTION SETUP COMPLETE	
59	->		SERVICE REQUEST	service type = "paging response"
60	<-		RRC CONNECTION RELEASE	
61	->		RRC CONNECTION RELEASE COMPLETE	
~~62~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~63~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~64~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.7a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Location Area not allowed', UE shall:

- not initiate MM location updating procedure.

At step8, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 16, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 18, when the UE is in the same location area, UE shall:

- not perform PS attach procedure.

At step21, when the UE enters a new location area, UE shall

- perform the combined PS attach procedure.

At step28 and 52, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35 and 59, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step45, when the UE is powered up or switched on, UE shall:

- perform the combined PS attach procedure.

12.2.2.7b Combined PS attach / rejected / No Suitable Cells In Location Area

12.2.2.7b.1 Definition

12.2.2.7b.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for roaming'.

   1.4 not delete the list of "equivalent PLMNs".

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   2.1 search for a suitable cell in a different location area on the same PLMN.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'No Suitable Cells In Location Area'.

12.2.2.7b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN and shall perform combined PS attach procedure in that cell

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6		<-	DETACH REQUEST	Detach type = re-attach required
7		->	DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
10		<-	ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
11		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell B.
12	UE			The UE initiates an attach automatically, by MMI or by AT command.
13		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
14		<-	AUTHENTICATION AND CIPHERING REQUEST	
15		->	AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
18		->	ATTACH COMPLETE	
~~19~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~20~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~

	~~21~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.2.7b.5 Test requirements

At step4 and 9, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected sequence.

At step13, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- initiate the combined PS attach procedure.

12.2.2.7c Combined PS attach / rejected / Roaming not allowed in this location area

12.2.2.7c.1 Definition

12.2.2.7c.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Roaming not allowed in this location area' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 delete any TMSI, LAI and ciphering key sequence number.

   1.4 store the LAI in the list of "forbidden location areas for roaming".

   1.5 perform a PLMN selection.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Roaming not allowed in this location area'.

12.2.2.7c.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) , cell C in MCC1/MNC1/LAC2/RAC2 (RAI-12)
All three cells are operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No LOCATION UPDATING REQ and ATTACH REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7		<-	PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		->		No response from the UE to the request. This is checked for 10 seconds
11	UE			UE performs PLMN selection.
		SS		The following messages are sent and shall be received on cell B.
12		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a		<-	AUTHENTICATION AND CIPHERING REQUEST	
15b		->	AUTHENTICATION AND CIPHERING RESPONSE	
15c		SS		The SS starts integrity protection.
16		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
17		->	ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell C.
18		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19	UE			Cell C is preferred by the UE.
20	UE		Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
21	UE			UE initiates an attach automatically (see ICS) via MMI or AT commands.

Step	Direction		Message	Comments
	UE	SS		
22		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
23		->	RRC CONNECTION REQUEST	
24		<-	RRC CONNECTION SETUP	
25		->	RRC CONNECTION SETUP COMPLETE	
26		->	PAGING RESPONSE	Mobile identity = TMSI-1
27		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28		->	RRC CONNECTION RELEASE COMPLETE	
29		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
30		->	RRC CONNECTION REQUEST	
31		<-	RRC CONNECTION SETUP	
32		->	RRC CONNECTION SETUP COMPLETE	
33		->	SERVICE REQUEST	Service type = "paging response"
34		<-	RRC CONNECTION RELEASE	
35		->	RRC CONNECTION RELEASE COMPLETE	
~~36~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~37~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~38~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform MM IMSI attach and PS attach.

At step8, UE shall:

- not respond to paging for CS domain service.

At step10, UE shall:

- not respond to paging for PS domain service.

At step15, UE shall:

- perform PS attach procedure.

At step20, UE shall:

- perform MM IMSI attach procedure.

12.2.2.7d Combined PS attach / rejected / PS services not allowed in this PLMN

12.2.2.7d.1 Definition

12.2.2.7d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

2) If the UE is in UE operation mode A the User Equipment shall:

   2.1 perform IMSI attach for non-GPRS services by use of the MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.2.2.7d.4 Method of test

Initial condition

System Simulator:

Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2). All two cells are operating in network operation mode I.

The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE does not perform PS attach and performs an IMSI attach for non-PS services by use of the MM IMSI attach procedure when in the same cell.

After the cell is changed to equivalent PLMN, the UE shall perform PS attach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
5	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
6	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
10	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
11	<-		ATTACH REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
12	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
13		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the " Serving cell". (see note) The following messages are sent and shall be received on cell B.
14	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15	<-		AUTHENTICATION AND CIPHERING REQUEST	
16	->		AUTHENTICATION AND CIPHERING RESPONSE	
17		SS		The SS starts integrity protection.
18	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19	->		ATTACH COMPLETE	
~~20~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~21~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~22~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.2.2.7d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step4 and 9, UE shall:

- perform MM IMSI attach.

At step12, UE shall:

- not perform PS attach procedure.

At step14, UE shall:

- perform PS attach procedure.

12.2.2.8 Combined PS attach / abnormal cases / attempt counter check / miscellaneous reject causes

12.2.2.8.1 Definition

12.2.2.8.2 Conformance requirement

1) When a combined PS attach procedure is rejected with the attempt counter less than five, the User Equipment shall repeat the combined PS attach procedure after T3311 timeout.

2) When a combined PS attach procedure is rejected with the attempt counter five, the User Equipment shall delete the stored TMSI, LAI, CKSN, P-TMSI, P-TMSI signature, PS CKSN and RAI and start T3302.

3) When the T3302 expire, a new combined PS attach procedure shall be initiated.

GMM cause codes that can be selected are:
'IMSI unknown in HLR'
'MS identity cannot be derived by the network'
'Network failure'
'Congestion'
'retry upon entry into a new cell'
'Semantically incorrect message'
'Invalid mandatory information'
'Message type non-existent or not implemented'
'Message type not compatible with the protocol state'
'Information element non-existent or not implemented'
'Conditional IE error'
'Message not compatible with the protocol state'
'Protocol error, unspecified'

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.8.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.2.2.8.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No Automatic PS attach procedure at switch on or power on Yes/No

Switch off on button Yes/No

Test procedure

The UE initiates a combined PS attach procedure (attempt counter zero).

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter one) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter two) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter three) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter four) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE shall not perform a new successful attach procedure after 15 seconds.

The UE initiates a combined PS attach procedure with attempt counter zero after T3302 expires without P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 10 minutes.

T3311; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4	<-		ATTACH REJECT	Arbitrary chosen GMM cause T3302 with value 10 min.
5	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
6	SS			The SS verifies that the time between the attach reject and attach request is T3311
7	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
8	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
9	SS			The SS verifies that the time between the attach reject and attach request is T3311
10	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
11	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
12	SS			The SS verifies that the time between the attach reject and attach request is T3311
13	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
14	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
15	SS			The SS verifies that the time between the attach reject and attach request is T3311
16	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
17 (optional step)	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Location Update Procedure may be initiated from the UE. Parameter mobile identity is IMSI.
20	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-1
21	UE			No response from the UE to the request. This is checked for 10seconds.
21a			Void	
22	SS			The SS verifies that the UE does not attempt to attach for T3302 .
23	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
23a	<-		AUTHENTICATION AND CIPHERING REQUEST	
23b	->		AUTHENTICATION AND CIPHERING RESPONSE	
23c	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity P-TMSI-1 P-TMSI signature Mobile identity = TMSI-1 Routing area identity = RAI-1
25	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
26		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services..
27		->	RRC CONNECTION REQUEST	
28		<-	RRC CONNECTION SETUP	
29		->	RRC CONNECTION SETUP COMPLETE	
30		->	PAGING RESPONSE	Mobile identity = TMSI-1
31		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32		->	RRC CONNECTION RELEASE COMPLETE	
33		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
33a		->	RRC CONNECTION REQUEST	
33b		<-	RRC CONNECTION SETUP	
33c		->	RRC CONNECTION SETUP COMPLETE	
34		->	SERVICE REQUEST	Service type = "paging response"
34a		<-	RRC CONNECTION RELEASE	
34b		->	RRC CONNECTION RELEASE COMPLETE	
~~35~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~36~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~37~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case1) A combined PS attach procedure is rejected with the attempt counter less than five

At step 5, 8, 11 and 14, when the timer T3311 timeout has occurred, UE shall:

- repeat the combined PS attach procedure.

Case2) A combined PS attach procedure is rejected with the attempt counter five

At step21, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

Case3) The T3302 expires

At step23, UE shall:

- re-initiate the new combined PS attach procedure.

At step30, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step34, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.9 Combined PS attach / abnormal cases / PS detach procedure collision

12.2.2.9.1 Definition

12.2.2.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall ignore the combined PS detach procedure and continue with the combined PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.2.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI. UE is Idle Updated.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
Re-attach automatically when the network commands a detach with no cause value Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (any cause except re-attach). The UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (cause re-attach). The UE shall ignore the combined PS detach procedure and continue with the combined PS attach. CS services are also possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7			(void)	
8			(void)	
9	UE			The UE is attached by MMI or AT command if the UE does not re-attach automatically upon receiving a network initiated detach with no cause value, (see IXIT).
10	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
12	<-		DETACH REQUEST	Detach type = 're-attach required'
13	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure
14	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-1
15	->		ATTACH COMPLETE	
16	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
17	->		RRC CONNECTION REQUEST	
18	<-		RRC CONNECTION SETUP	
19	->		RRC CONNECTION SETUP COMPLETE	
20	->		PAGING RESPONSE	Mobile identity = TMSI-2
21	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
22	->		RRC CONNECTION RELEASE COMPLETE	
23	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-2
23a	->		RRC CONNECTION REQUEST	
23b	<-		RRC CONNECTION SETUP	
23c	->		RRC CONNECTION SETUP COMPLETE	
24	->		SERVICE REQUEST	Service type = "paging response"
24a	<-		RRC CONNECTION RELEASE	
24b	->		RRC CONNECTION RELEASE COMPLETE	
~~25~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~26~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~27~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.2.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type described below.

Case1) Detach type is not re-attach

At step6, UE shall:

- respond to DETACH REQUEST message by sending DETACH ACCEPT message.

Case2) Detach type is re-attach

At step13, UE shall:

- ignore the PS detach procedure.

At step15, UE shall:

- send the ATTACH COMPLETE message.

At step20, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3 PS detach procedure

12.3.1 UE initiated PS detach procedure

12.3.1.1 PS detach / power off / accepted

12.3.1.1.1 Definition

12.3.1.1.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is switched off.

Reference

3GPP TS 24.008 clause 4.7.4.1

12.3.1.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set o attach to the PS services only (see ICS). If that is not supported by the UE, goto step 8.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, GPRS detach'
7a				The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
8	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 7a.

Specific message contents

None.

12.3.1.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, GPRS detach'.

12.3.1.2 PS detach / accepted

12.3.1.2.1 Definition

12.3.1.2.2 Conformance requirement

1) The GPRS detach procedure is initiated by the UE by sending a DETACH REQUEST message. The detach type information element may indicate "GPRS detach with switching off", "GPRS detach without switching off", "IMSI detach", "GPRS/IMSI detach with switching off" or "GPRS/IMSI detach without switching off".

   The UE shall include the P-TMSI in the DETACH REQUEST message. The UE shall also include a valid P-TMSI signature, if available.

2) Upon completion of the detach procedure, the used P-TMSI signature shall be deleted.

Reference

3GPP TS 24.008 clause 4.7.4.1.1

3GPP TS 24.008 clause 4.7.1.3

12.3.1.2.3 Test purpose

To test the behaviour of the UE for the detach procedure, including treatment of P-TMSI signature.

12.3.1.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
UE PS Release Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If that is not supported by the UE, goto step 18.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
5			(void)	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach"
7	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
7a	SS			The SS starts ciphering and integrity protection.
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	UE			The UE initiates an attach by MMI or AT commands
12	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
12a	SS			The SS starts ciphering and integrity protection.
13	<-		ATTACH ACCEPT	No new mobile identity assigned Attach result = 'GPRS only attached' Routing area identity = RAI-1
14	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
15	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach' Mobile identity = P-TMSI-1
16	<-		DETACH ACCEPT	
17			(void)	
18	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 16.

Specific message contents

None.

12.3.1.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and P-TMSI-1 signature.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step 12, UE shall

- initiate ATTACH REQUEST message without P-TMSI signature IE.

At step 15, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and without P-TMSI-1 signature.

12.3.1.3 PS detach / abnormal cases / attempt counter check / procedure timeout

12.3.1.3.1 Definition

12.3.1.3.2 Conformance requirement

1) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter less than five, the User Equipment shall repeat the PS detach procedure.

2) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter five, the User Equipment shall not repeat the procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.3.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.3.1.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE initiates a PS detach procedure (attempt counter zero). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter one) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter two) after T3321expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter three) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter four) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure with attempt counter five (after T3321expires). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

At T3321 timeout in the UE, the UE then deletes the logical link since the retransmissions have been repeated four times.

The UE performs a new PS attach procedure.

T3321; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 25.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
5	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
7	SS			No response is given from the SS.
8	SS			The SS verifies that the time between the detach requests is 15 seconds
9	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
10	SS			No response is given from the SS.
11	SS			The SS verifies that the time between the detach requests is 15 seconds
12	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
13	SS			No response is given from the SS.
14	SS			The SS verifies that the time between the detach requests is 15 seconds
15	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
16	SS			No response is given from the SS.
17	SS			The SS verifies that the time between the detach requests is 15 seconds
18	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
19	SS			No response is given from the SS within 40 seconds and SS verifies that the UE will not send a DETACH REQUEST again.
20	UE			Initialte a PS attach
21	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c	SS			The SS starts integrity protection.
22	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
23				UE is switched off or power is removed (see ICS)
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
24a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
25	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 24.

Specific message contents

None.

12.3.1.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attaché procedure with the information elements specified in the above Expected Sequence.

At step9, 12, 15 and 18, when a T3321 expires with the attempt counter less than five, UE shall:

- initiate the new PS detach procedure.

At step19, when the attempt counter is greater than or equal to five, UE shall:

- not repeat the PS detach procedure.

At step20, UE shall:

- initiate the PS attaché procedure.

12.3.1.4 PS detach / abnormal cases / GMM common procedure collision

12.3.1.4.1 Definition

12.3.1.4.2 Conformance requirement

When any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off", the UE shall ignore the GMM common message.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.4.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The following test procedure is repeated for sequence counter k = 1,2,3:

The UE performs a PS attach.

The UE initiates a PS detach. The SS initiates a P-TMSI REALLOCATION COMMAND message (k=1), a GMM STATUS message (k=2) and a GMM INFORMATION message (k=3). The UE shall ignore the GMM common messages and continue with the PS detach procedure. The sending of the P-TMSI REALLOCATION COMMAND message (k = 1), the GMM STATUS message (k = 2), the GMM INFORMATION message (k = 3) and the DETACH ACCEPT message shall be completed within Timer T3321 -10%.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

The test sequence is repeated for k = 1 … 3

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
8A (k=1)	SS			The SS sends a P-TMSI REALLOCATION COMMAND message
9A (k=1)	<-		P-TMSI REALLOCATION COMMAND	
10A (k=1)	UE			The UE ignores the message. This is verified for 10 seconds.
8B (k=2)	SS			The SS sends a GMM STATUS message
9B (k=2)	<-		GMM STATUS	
10B (k=2)	UE			The UE ignores the message. This is verified for 10 seconds.
8C (k=3)	SS			The SS sends a GMM INFORMATION message
9C (k=3)	<-		GMM INFORMATION	
10C (k=3)	UE			The UE ignores the message which is verified for 10 seconds or if GMM INFORMATION message not implemented, sends a GMM STATUS with GMM Cause 'Message type non-existent or not implemented'.
11	<-		DETACH ACCEPT	The SS responds to the DETACH REQUEST
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.

Note: Steps 8x, 9x, 10x and 11 shall be completed within Timer T3321 -10%.

Specific message contents

None.

12.3.1.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step 10A, 10B, 10C and 13, when any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off, UE shall:

- ignore any of the GMM common message.

12.3.1.5 PS detach / power off / accepted / PS/IMSI detach

12.3.1.5.1 Definition

12.3.1.5.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.5.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. The UE then deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is setto attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, combined GPRS / IMSI detach'
7a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.1.5.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, combined GPRS/ IMSI detach'.

12.3.1.6 PS detach / accepted / PS/IMSI detach

12.3.1.6.1 Definition

12.3.1.6.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.6.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.6.4 Method of test

Initial condition

System Simulator:

- One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No
  User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. When the UE receives the DETACH ACCEPT, the UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates a detach (without power off) by MMI or AT command (see ICS).
6a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.6.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.1.7 PS detach / accepted / IMSI detach

12.3.1.7.1 Definition

12.3.1.7.2 Conformance requirement

The UE shall detach for CS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.7.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.7.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

- The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No
  User requested non-PS detached Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE performs an PS detach (for non-PS services).

CS services are not possible.

The UE attach for non-PS services by a routing area update procedure and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach for non-PS services (without power off) (see ICS).
7	->		DETACH REQUEST	Detach type = 'normal detach, IMSI detach'
8	<-		DETACH ACCEPT	
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
9a	->		RRC CONNECTION REQUEST	
9b	<-		RRC CONNECTION SETUP	
9c	->		RRC CONNECTION SETUP COMPLETE	
10	->		SERVICE REQUEST	service type = "paging response"
10a	<-		RRC CONNECTION RELEASE	
10b	->		RRC CONNECTION RELEASE COMPLETE	
11	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging order is for RRC connection.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
13	UE			The UE initiates an attach for non-PS services by a RA update procedure (see ICS).
14	->		ROUTING AREA UPDATE REQUEST	Update type = "Combined RA/LA updating with IMSI attach" Old Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated" Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
16	->		ROUTING AREA UPDATE COMPLETE	
17	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19	<-		RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).

Step	Direction		Message	Comments
	UE	SS		
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
26	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.1.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step12, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- not respond to the paging message for CS.

At step21, after the routing area updating procedure (Update type = 'Combined RA/LA updating') is completed, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.1.8 PS detach / abnormal cases / change of cell into new routing area

12.3.1.8.1 Definition

12.3.1.8.2 Conformance requirement

When a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, the UE shall abort the PS detach procedure and re-initiate it after the routing area update procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.8.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

Sufficient time is given for the UE to identify the neighbour cell before the UE is triggered to initiate a PS detach procedure. The DETACH ACCEPT message is delayed from the SS.

The UE performs a cell reselection to a cell in a new routing area and performs a routing area update procedure.

The UE shall re-initiate a PS detach procedure when the routing area update procedure is finished.

The UE deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
6a		SS		SS waits 30 sec.
7	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
8	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
9		SS		No response to the DETACH REQUEST message is given by the SS
				The following messages are sent and shall be received on cell B.
10		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note) Cell B is preferred by the UE.
11	UE			The UE performs a RA update in the new cell.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE omitted
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	->		DETACH REQUEST	The detach is automatically re-attempted. Detach type = 'normal detach, combined GPRS / IMSI detach'
16	<-		DETACH ACCEPT	
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, UE shall:

- abort a PS detach procedure.
- perform routing area updating procedure.

At step15, when the UE completes a routing area updating procedure, UE shall:

- re-initiate the PS detach procedure.

12.3.1.9 PS detach / abnormal cases / PS detach procedure collision

12.3.1.9.1 Definition

12.3.1.9.2 Conformance requirement

When a DETACH REQUEST is received by the UE while waiting for a DETACH ACCEPT message, the UE shall answer the network initiated GPRS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE initiates a PS detach. The SS does not answer the detach procedure, but initiates a detach procedure (cause re-attach not required). The UE shall continue with the network initiated detach procedure.

The UE deletes the logical link.

PS and CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A(see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
8	<-		DETACH REQUEST	Detach type = 're-attach not required'
9	->		DETACH ACCEPT	The UE answers the network initiated detach.
10	<-		DETACH ACCEPT	The SS answers the UE initiated detach.
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services.
14	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives DETACH REQUEST message from SS before UE initiated GPRS detach procedure has been completed, UE shall:

- send the DETACH ACCEPT message to SS.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.2 Network initiated PS detach procedure

12.3.2.1 PS detach / re-attach not required / accepted

12.3.2.1.1 Definition

12.3.2.1.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a PS attach procedure.

The SS sends a DETACH REQUEST message to the UE. The UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The SS is set in network operation mode II.
2	UE			The UE is set to either attach to PS only or both the PS and non-PS services (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The SS initiates a PS detach.
8	<-		DETACH REQUEST	Detach type = 're-attach not required' GMM cause = ‘GPRS services and non-GPRS services not allowed’
9	->		DETACH ACCEPT	
9a		SS		The SS releases the RRC connection.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.

Specific message contents

None.

12.3.2.1.5 Test requirements

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall:

- send DETACH ACCEPT message to SS.

At step11, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.3.2.2 PS detach / rejected / IMSI invalid / PS services not allowed

12.3.2.2.1 Definition

12.3.2.2.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network performs a PS detach procedure with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.2.3 Test purpose

To test the behaviour of the UE if the network orders a PS detach procedure with the cause 'GPRS services not allowed' (no valid PS-subscription for the IMSI).

12.3.2.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode II.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS performs a detach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause = 'GPRS services not allowed'
8	->		DETACH ACCEPT	
				The following messages are sent and shall be received on cell B.
9		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10	UE			Cell B is preferred by the UE. Step 11 is only performed for UE Operation Mode A.
11	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
12				The UE initiates an attach automatically (see ICS), by MMI or AT commands.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
15	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
15a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
16	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
16a	<-		AUTHENTICATION AND CIPHERING REQUEST	
16b	->		AUTHENTICATION AND CIPHERING RESPONSE	
16c		SS		The SS starts integrity protection.

17	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
18	->	ATTACH COMPLETE	
19	UE		The UE is switched off or power is removed (see ICS).
20	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
20a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.2.5 Test requirements

At step4 and 15, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'GPRS services not allowed') from SS, UE shall:

- send DETACH ACCEPT message.

At step13, UE shall:

- not perform PS attach procedure.

12.3.2.3 PS detach / IMSI detach / accepted

12.3.2.3.1 Definition

12.3.2.3.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.3.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE. The UE then performs an IMSI detach (detach for non-PS services).

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE attach for non-PS services by a routing area update procedure. Both PS and CS services are possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach for non-PS services.
7	<-		DETACH REQUEST	Detach type = 'IMSI detach'
8	->		DETACH ACCEPT	
9	UE			The UE initiates an attach for non-PS services (see ICS).
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
12	->		ROUTING AREA UPDATE COMPLETE	
13	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
14	->		RRC CONNECTION REQUEST	
15	<-		RRC CONNECTION SETUP	
16	->		RRC CONNECTION SETUP COMPLETE	
17	->		PAGING RESPONSE	Mobile identity = TMSI-1
18	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
19	->		RRC CONNECTION RELEASE COMPLETE	
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
22	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message with Detach type = 'IMSI detach', UE shall;

- send the DETACH ACCEPT message to SS.

At step10, after the completion of the detach procedure, UE shall;

- perform combined routing area updating procedure.

At step17, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.4 PS detach / re-attach requested / accepted

12.3.2.4.1 Definition

12.3.2.4.2 Conformance requirement

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach required", the UE shall deactivate the PDP contexts and deactivate the logical link(s), if any. The UE shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED. The UE shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure. The UE should also activate PDP context(s) to replace any previously active PDP contexts.

A GPRS UE operating in UE operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

Reference

3GPP TS 24.008 clause 4.7.4.2.2.

12.3.2.4.3 Test purpose

To test the behaviour of the UE for the detach procedure in case automatic re-attach.

12.3.2.4.4 Method of test

Initial condition

System Simulator:

One cell in operating in network operation mode I.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE with cause re-attach. The UE then detaches for PS services. The UE automatically performs a new combined PS attach procedure with Attach Type “GPRS attach while IMSI attached” (for PS services) and PS and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity = TMSI-1 Routing area identity = RAI-1 No new P-TMSI and P-TMSI signature assigned
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach with re-attach.
7	<-		DETACH REQUEST	Detach type = 're-attach required', GMM cause omitted
8	->		DETACH ACCEPT	
9	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
10	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity = TMSI-1 Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
11	->		ATTACH COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
12a	->		RRC CONNECTION REQUEST	
12b	<-		RRC CONNECTION SETUP	
12c	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
13a	<-		RRC CONNECTION RELEASE	
13b	->		RRC CONNECTION RELEASE COMPLETE	
14	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
15	->		RRC CONNECTION REQUEST	
16	<-		RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
18	->		PAGING RESPONSE	Mobile identity = TMSI-1
19	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives DETACH REQUEST message with Detach type = 're-attach required', UE shall;

- send DETACH ACCEPT message to SS.

At step9, after UE completed PS detach procedure with Detach type = 're-attach required', UE shall:

- initiate the combined PS attach procedure with an Attach Type of either 'Combined GPRS/IMSI attach' or ‘GPRS attach while IMSI attached’.

At step13, when the UE receives the paging message for PS domain, UE shall;

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step18, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.5 PS detach / rejected / location area not allowed

12.3.2.5.1 Definition

12.3.2.5.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete any RAI or LAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number
   .

   1.3 store the LAI in the list of the 'forbidden location areas for regional provision of service'.

   1.4 delete any TMSI, LAI and ciphering key sequence number if the UE is IMSI attached and if no RRC connection exists or if the UE is operating in UE operation mode A and an RRC connection exists when the RRC connection is subsequently released.

2) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

   2.1 perform combined PS attach when a new location area is entered.

   2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.5.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.3.2.5.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
All cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
PS attach attempted automatically by outstanding request Yes/No

Test procedure

The SS orders a PS detach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell ". Set the cell type of cell C to the "Non-Suitable cell ". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'Location Area not allowed'
8	->		DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22				No response from the UE to the request. This is checked for 10 seconds

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell C.
23		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 and 26 are only performed by an UE which will not initiate a PS attach automatically (see ICS)
25 conditional	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26 conditional	UE			The UE initiates an attach by MMI or AT command.
27	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-1
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->		RRC CONNECTION REQUEST	
39	<-		RRC CONNECTION SETUP	
40	->		RRC CONNECTION SETUP COMPLETE	
41	->		SERVICE REQUEST	service type = "paging response"
42	<-		RRC CONNECTION RELEASE	
43	->		RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.
46	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE			The UE is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
				Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6 TMSI status = valid TMSI available or IE not present
51	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
69	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Location Area not allowed') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.2.6 PS detach / rejected / No Suitable Cells In Location Area

12.3.2.6.1 Definition

12.3.2.6.2 Conformance requirement

1. If the network performs a PS detach procedure with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.2 store the LA in the 'forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.6.3 Test purpose

To test the behaviour of the UE if the network sends the DETACH REQUEST message with the cause 'No Suitable Cells In Location Area'.

12.3.2.6.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode I.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS sends a DETACH REQUEST message with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall not perform combined PS attach while in the same location area on the same PLMN. The SS checks that the UE shall perform PS attach when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'No Suitable Cells In Location Area'
7	->		DETACH ACCEPT	
				The following message are sent and shall be received on cell B.
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
10	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-□
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.3.2.7 PS detach / rejected / Roaming not allowed in this location area

12.3.2.7.1 Definition

12.3.2.7.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'Roaming not allowed in this location area' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the GPRS update status to GU3 ROAMING NOT ALLOWED.

   1.3 reset the attach attempt counter.

   1.4 store the LAI in the list of "forbidden location areas for roaming".

   1.5 perform a PLMN selection.

2) If the UE is IMSI attached via MM procedures, the UE shall in addition:

   2.1 delete any TMSI, LAI and ciphering key sequence number.

   2.2 reset the location update attempt counter.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.7.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause ' Roaming not allowed in this location area '.

12.3.2.7.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
All cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No

Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS orders a PS detach with the cause value ' Roaming not allowed in this location area '. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
7		<-	DETACH REQUEST	Detach type = 're-attach not required' Cause 'Roaming not allowed in this location area '
8		->	DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22				No response from the UE to the request. This is checked for 10 seconds

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell C.
23		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 is only performed for non-auto attach UE.
25	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26	UE			The UE initiates an attach automatically (See ICS), by MMI or AT command.
27		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6
29		->	ATTACH COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31		->	RRC CONNECTION REQUEST	
32		<-	RRC CONNECTION SETUP	
33		->	RRC CONNECTION SETUP COMPLETE	
34		->	PAGING RESPONSE	Mobile identity = TMSI-1
35		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36		->	RRC CONNECTION RELEASE COMPLETE	
37		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38		->	RRC CONNECTION REQUEST	
39		<-	RRC CONNECTION SETUP	
40		->	RRC CONNECTION SETUP COMPLETE	
41		->	SERVICE REQUEST	service type = "paging response"
42		<-	RRC CONNECTION RELEASE	
43		->	RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.
46	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE			The UE is powered up or switched on and initiates an attach (see ICS). Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1

Step	Direction		Message	Comments
	UE	SS		
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6 TMSI status = valid TMSI available or IE not present
51	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
69	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = ' Roaming not allowed in this location area') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.2.8 PS detach / rejected / PS services not allowed in this PLMN

12.3.2.8.1 Definition

12.3.2.8.2 Conformance requirement

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE:

1. shall delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored, shall set the PS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall change to state GMM-DEREGISTERED.
2. shall store the PLMN identity in the "forbidden PLMNs for PS service" list.

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE operating in UE operation mode A in network operation mode I:

1. shall set the timer T3212 to its initial value and restart it, if it is not already running.
2. is still IMSI attached for CS services in the network.

Reference(s):

3GPP TS 24.008 subclause 4.7.4.2.2

12.3.2.8.3 Test purpose

Test purpose for Test procedure1

To test the behaviour of the UE if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement1, 2).

Test purpose for Test procedure2

To test the behaviour of the UE operating in UE operation mode A in network operation mode I if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement3, 4).

12.3.2.8.4 Method of test

12.3.2.8.4.1 Test procedure1

Initial conditions

System Simulator:

Two cells cellA in MCC1/MNC1/LAC1/RAC1, cellB in MCC1/MNC2/LAC2/RAC1.
Both two cells are operating in network operation mode II.
The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- UE operation mode C Yes/No (only if mode A not supported)..
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

Two cells are configured.

Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

The UE initiates a PS attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE does not perform a periodic ROUTING AREA UPDATE procedure in this PLMN after the timer T3312 is expired and does not respond a paging for PS services.

Cell B transmits with high power so that the UE attempts an attach procedure to cell B.

The UE initiates a PS attach procedure.

The SS verifies that the UE performs a periodic ROUTING AREA UPDATE procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A or C (see ICS).
2	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
6	->		AUTHENTICATION AND CIPHERING RESPONSE	
7	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC1,MNC2 T3312 = 6minutes
9	->		ATTACH COMPLETE	
10	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
11	->		DETACH ACCEPT	
12	SS			The SS releases the RRC connection.
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	UE			The SS verifies that the UE does not attempt to access the network for T3312.
				The following messages are sent and shall be received on cell B.
16	SS			Set the cell type of cell A to the "Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell " (see note)
17				Cell B is preferred by the UE. Step 18 is only performed for non-auto attach UE.
18			Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
19				The UE initiates an attach automatically (See ICS), by MMI or AT command.
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
21	<-		AUTHENTICATION AND CIPHERING REQUEST	
22	->		AUTHENTICATION AND CIPHERING RESPONSE	
23	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-9 Equivalent PLMNs = MCC1,MNC1 T3312 = 6minutes
25	->		ATTACH COMPLETE	

26	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
27	->	ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-9
28	<-	ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated' Equivalent PLMNs = MCC1,MNC1
29	UE		The UE is switched off or power is removed (see ICS).
30	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off,
31	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.8.4.2 Test procedure2

Initial conditions

System Simulator:

One cell is operating in network operation mode I: MCC1/MNC1/LAC1/RAC1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

One cell is configured.

The UE initiates a combined attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE performs a periodic location area updating procedure after the timer T3212 is expired.

The SS verifies that the UE responds a paging for CS services.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	<-		AUTHENTICATION AND CIPHERING REQUEST	
5	->		AUTHENTICATION AND CIPHERING RESPONSE	
6	SS			The SS starts integrity protection.
7	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
8	->		ATTACH COMPLETE	
9	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
10	->		DETACH ACCEPT	
11				The SS releases the RRC connection
12	SS			The SS waits for the UE to expiry the timer T3212.
13	UE		Registration on CS	The UE performs a location update procedure. See TS 34.108 Mobile identity = IMSI
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
15	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16	->		PAGING RESPONSE	Mobile identity = IMSI
17				The SS releases the RRC connection
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.8.5 Test Requirement

12.3.2.8.5.1 Test Requirement for Test procedure1

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step11, when the UE receives DETACH REQUEST message with the cause "GPRS services not allowed in this PLMN", the UE shall:

- send DETACH ACCEPT message.

At step13, when the UE receives the paging for PS services with "Mobile identity = P-TMSI-2", the UE shall;

- not respond to the paging for PS services.

At step14, when the time T3312 is expired, the UE shall:

- not attempt to access the network.

At step20, when the UE enters the different cell with the equivalent PLMN, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step27, when the time T3312 is expired, the UE shall:

- initiate the periodic routing area updating procedure with the information elements specified in the above Expected Sequence.

12.3.2.8.5.2 Test Requirement for Test procedure2

At step3, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives DETACH REQUEST message with cause "GPRS services not allowed in this PLMN ", the UE shall:

- send DETACH ACCEPT message.

At step12, while the SS wait for the timer T3312 to expire, the UE shall:

- not perform the periodic location area updating procedure.

At step13, when the T3212 timer is expired, the UE shall:

- initiate the periodic location area updating procedure.

At step16, when the UE receives the paging for CS services with "Mobile identity = IMSI", the UE shall;

- respond to the paging for CS services by sending the PAGING RESPONSE message.

12.4 Routing area updating procedure

This procedure is used to update the actual routing area of an UE in the network.

12.4.1 Normal routing area updating

The routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A or C that are IMSI attached for PS services only.

12.4.1.1a Routing area updating / accepted

12.4.1.1a.1 Definition

12.4.1.1a.2 Conformance requirement

1) If the network accepts the routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

2) If the network accepts the routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

3) The routing area updating procedure shall also be used by a UE which is attached for PS services if a new PLMN is entered.

Reference

3GPP TS 24.008 clause 4.7.5, 4.7.5.1.

12.4.1.1a.3 Test purpose

To test the behaviour of the UE if the network accepts the routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.

2) Old P-TMSI / P-TMSI signature is not changed.

To test the behaviour of the UE if the UE enters the new PLMN.

12.4.1.1a.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).
All three cells are operating in network operation mode II.
The PLMN contains cell C is equivalent to the PLMN that contains cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.

2) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the P-TMSI.

3) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 32.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMN: MCC = 2, MNC = 1
6	->		ATTACH COMPLETE	
6a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signatureOld P-TMSI signature= Routing area identOld ity = RAI-1
8a		SS		The SS starts integrity protection.
9	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
10	->		ROUTING AREA UPDATE COMPLETE	
11			Void	
11b			Void	
11c		SS		The SS releases the RRC connection.
11d	<-		PAGING TYPE1	Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = Paging order is for PS services.

Step	Direction		Message	Comments
	UE	SS		
11e		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.
14		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
15	UE			Cell A is preferred by the UE.
15a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
16		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
16a		SS		The SS starts integrity protection.
17		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-1 signature Routing area identity = RAI-1 Equivalent PLMN: MCC = 2, MNC = 1
17a		SS		The SS releases the RRC connection.
18		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".
18a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call"
18b			Void	
18c			Void	
19		->	SERVICE REQUEST	service type = "paging response"
19aa		SS		The SS starts integrity protection.
19a		SS		The SS releases the RRC connection.
20		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
21	UE			Cell C is preferred by the UE.
21a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
22		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
23		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
24		SS		The SS starts integrity protection.
25		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
26		->	ROUTING AREA UPDATE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
27		SS		The SS releases the RRC connection.
28	UE			The UE is switched off or power is removed (see ICS).
29		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
30	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
31		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
32	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 31.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.1a.5 Test requirements

At step 3a, 7a, 15a and 22 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 18a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 29 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step13, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- not respond to the paging message for PS domain.

At step16, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step19, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step23, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

12.4.1.1b Routing area updating / accepted / Signalling connection re-establishment

12.4.1.1b.1 Definition

12.4.1.1b.2 Conformance requirement

When the UE receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", then the UE shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not.

Reference

3GPP TS 24.008 clause 4.7.2.5, 4.7.5.1

12.4.1.1b.3 Test purpose

To test the behaviour of the UE if the UE receives a RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment".

12.4.1.1b.4 Method of test

Initial condition

System Simulator:

One cell(Cell A) in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode II. ATT flag is set to 0.

User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.

b) After the Service request procedure is complete, the SS sends the RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment" to the UE.

c) After the UE release the RRC connection, the UE initiate immediately a normal routing area update procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI1

Step	Direction		Message	Comments
	UE	SS		
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
10	SS			The SS starts integrity protection.
11	SS			The SS releases the RRC connection, using Release cause=Directed Signalling Connection Re-establishment
12			Void	
13	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Call re-establishment".
14			Void	
15			Void	
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' (FOR bit not checked) Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
18	->		ROUTING AREA UPDATE COMPLETE	
~~19~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~20~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'~~
~~21~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.4.1.1b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, UE shall;

- initiate the routing area updating procedure whether the routing area has been changed since the last update or not.

12.4.1.1c Void

12.4.1.2 Routing area updating / rejected / IMSI invalid / illegal ME

12.4.1.2.1 Definition

12.4.1.2.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Illegal ME'.

12.4.1.2.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II (in case of UE operation mode A)
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Illegal ME'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.
12	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the “Non-Suitable cell”. Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
16	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
16a				Step 16b is only performed by UE in operation mode A

16b	UE	Registration on CS	See TS 34.108 Parameter mobile identity is IMSI.
17	->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
17a	<-	AUTHENTICATION AND CIPHERING REQUEST	
17b	->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS		The SS starts integrity protection.
18	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
~~20~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~21~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'~~
~~22~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'Illegal ME', UE shall;

- not respond to the paging message for PS domain.

At step14, UE shall,

- not initiate PS attach procedure.

At step17, after the UE is powered up or USIM is replaced, UE shall;

- initiate the PS attach procedure.

12.4.1.3 Routing area updating / rejected / UE identity cannot be derived by the network

12.4.1.3.1 Definition

12.4.1.3.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'MS identity cannot be derived by the network', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Depending on the manufacturer the UE may or may not perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'MS identity cannot be derived by the network'.

12.4.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Automatic attach procedure when UE identity cannot be derived by the network Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal routing area updating with the cause value 'MS identity cannot be derived by the network'. The UE detach locally. A new PS attach may be performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'MS identity cannot be derived by the network'
11	UE			If an automatic attach procedure by the UE is not possible when the UE identity cannot be derived by the network (see ICS) goto step 19.
12	UE			An Automatic PS attach procedure is initiated (see ICS).
13		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
13a		<-	AUTHENTICATION AND CIPHERING REQUEST	
13b		->	AUTHENTICATION AND CIPHERING RESPONSE	
13c		SS		The SS starts integrity protection.
14		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
15		->	ATTACH COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
18		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
19	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
20	UE			No response from the UE to the request, as the UE has detached locally. This is checked for 10 seconds.
NOTE: The definitions for "Non-Suitable cell", Suitable neighbour cell and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the implementation of the UE.

Case 1) UE supports an Automatic PS attach procedure.

At step13, UE shall;

- initiate the PS attach procedure.

Case 2) UE does not support an Automatic PS attach procedure.

At step20, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.4.1.4a Routing area updating / rejected / location area not allowed

12.4.1.4a.1 Definition

12.4.1.4a.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature and TMSI, LAI and ciphering key sequence number.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

   1.4 not delete the list of "equivalent PLMNs".

   1.5 perform a cell selection.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment:

   2.1 may perform routing area update when a new location area is entered.

2.2 shall delete the list of forbidden LAs after switch off (power off).

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4a.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.4.1.4a.4 Method of test

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) , cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell D in MCC2/MNC1/LAC2/RAC1(RAI-6).
All four cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

The PLMN contains Cell D is equivalent to the PLMN that contains Cell C.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell C.
1		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 33.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell C is preferred by the UE.
3a			Void	
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
8		SS		Cell B is preferred by the UE.
8a				The following step is only performed for UE Operation Mode A.
8b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signatureOld P-TMSI signature= Routing area identOld ity = RAI-3
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Location Area not allowed'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.
13		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
13a	UE			The UE performs cell selection.
14	UE			Cell A is preferred by the UE.
15	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)

Step	Direction		Message	Comments
	UE	SS		
16		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16a	UE			The UE performs cell selection.
17	UE			Cell D is preferred by the UE. The following messages are sent and shall be received on cell D.
17a				The following step is only performed for UE Operation Mode A.
17b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20		->	ATTACH COMPLETE	
21	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
22		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-3
24a		<-	AUTHENTICATION AND CIPHERING REQUEST	
24b		->	AUTHENTICATION AND CIPHERING RESPONSE	
24c		SS		The SS starts integrity protection.
25		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
26		->	ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell A.
27				Set the cell type of cell A to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
28				Cell A is preferred by the UE.
28a				The following step is only performed for UE Operation Mode A.
28b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
29		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-3

Step	Direction		Message	Comments
	UE	SS		
30	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
31	UE			The UE is switched off or power is removed (see ICS).
32	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
32a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
33	SS			The SS is set in network operation mode II.
34	UE			The UE is set in UE operation mode A (see ICS), cell A is switched off and the test is repeated from step 3 to step 32.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12 and 15, when in the same location area, UE shall

- not perform PS attach procedure.

At step18, when a new location area is entered, UE shall

- perform the PS attach procedure.

At step24, when the USIM is replaced , UE shall;

- perform the PS attach procedure.

At step29, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

12.4.1.4b Routing area updating / rejected / No Suitable Cells In Location Area

12.4.1.4b.1 Definition

12.4.1.4b.2 Conformance requirement

-1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 store the LA identity in the 'forbidden location areas for roaming'.

1.2 search for a suitable cell in a different location area on the same PLMN.

1.3 not delete equivalent PLMNs list.

1.4 not delete the MM and GMM contexts

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4b.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.1.4b.4 Method of test

Initial condition

System Simulator:

Four cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4),

All four cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

The PLMNs of cells A, B, C and D are all equivalent.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

ii) Cell D will be mapped to Cell 3 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform Routing Area Update procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 Mobile identity = P-TMSI-1
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
				The following message are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 Mobile identity = P-TMSI-1 The UE shall initiate a location area updating procedure between steps 8 and 12.
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
11	->		ROUTING AREA UPDATE COMPLETE	
~~12~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~

~~13~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.1.4b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall;

- initiate the routing area updating procedure.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

12.4.1.4c.1 Definition

12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- shall set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for PS service" list.
- not delete the equivalent PLMN list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

   UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

   UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

   UE shall be still IMSI attached for CS services in the network.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.1.4c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

The UE is in UE operation mode C.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure 1

The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Serving cell". (see note)
13	UE			The UE performs PLMN selection.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
17		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
17a		<-	AUTHENTICATION AND CIPHERING REQUEST	
17b		->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS			The SS starts integrity protection.

18	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19	->	ATTACH COMPLETE	
~~20~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~21~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'~~
~~22~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

Test procedure2

Initial condition

System Simulator:

One cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I.

T3212 is set to 6 minutes.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout. The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The UE sets the timer T3212 to its initial value and restart it, if it is not already running.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
5b	SS			The SS verifies that the time between the attach and the periodic RA updating is T3312
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
7	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
8	UE		Registration on CS	See TS 34.108 Location Update Procedure is initiated from the UE when T3212 is expired.
9	->		void	
10	<-		void	
~~11~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~12~~	~~—>~~		~~DETACH REQUEST~~	~~Message not sent if power is removDetach type – 'power switched off, IMSI detach'ed.~~
~~13~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.4c.5 Test requirements

Test requirement for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;

- not respond to the paging message for PS domain.

At step13, UE shall,

- initiate PLMN selection.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step7, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step8, UE shall,

- initiate the periodic location area updating procedure when the timer T3212 is expired.

12.4.1.4d Routing area updating / rejected / Roaming not allowed in this location area

12.4.1.4d.1 Definition

12.4.1.4d.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1 shall not perform PS attach when in the same location area.

   1.2 shall store the LA in the 'forbidden location areas for roaming'.

   1.3 shall perform a routing area updating when entering into a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current status is different from "IDLE NO IMSI".

2) The User Equipment shall erase the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

References

3GPP TS 24.008 clause 4.7.5.1.4.

3GPP TS 23.122 clause 4.5.2.

3GPP TS 24.008 clause 4.4.1.

12.4.1.4d.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this location area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.1.4d.4 Method of test

12.4.1.4d.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. A new attempt for a PS attach is not possible. Successful PS attach procedure is performed in another location area. The UE is moved back to the 1st location area. A routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
20			Void	

Step	Direction		Message	Comments
	UE	SS		
21	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-2
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
23	->		ROUTING AREA UPDATE COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		SS		The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36		SS		The SS releases the RRC connection.
37			Void	
				The following messages are sent and shall be received on cell B.
38		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
39		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
40	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
41		UE		No response from the UE to the request. This is checked for 10 seconds.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

12.4.1.4d.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No

USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a PS attach is possible on the cell on which the previous routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
20	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.

Step	Direction		Message	Comments
	UE	SS		
21	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =P-TMSI-2
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c		SS		The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 MS identity = TMSI-1
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		SS		The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36		SS		The SS releases the RRC connection.
37			Void	
~~38~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~39~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~40~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.4d.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence

At step12, when the SS rejects the routing area update procedure with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the routing area update procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step41, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the PS attach procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.1.5 Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes

12.4.1.5.1 Definition

12.4.1.5.2 Conformance requirement

When a routing area updating procedure is rejected with the attempt counter less than five, the UE shall repeat the routing area updating procedure after T3311 timeout.

When a T3311 timeout has occurred during a routing area updating procedure with the attempt counter five, the UE shall start timer T3302.

When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.5.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.1.5.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). The ATT-flag shall indicate that the MS should use IMSI attach/detach procedures.
Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure (attempt counter zero).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter one) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter two) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter three) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter four) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure with attempt counter five (after T3311 expires).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE shall not perform a new successful routing area updating procedure after T3311 seconds.

The UE initiates a routing area updating procedure with attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; set to 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2a			Void	
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-2 signature Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
10		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
12		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
13		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
14		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
15		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
17		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1

Step	Direction		Message	Comments
	UE	SS		
18	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
19	SS			The SS verifies that the time between the routing area updating requests is 15 seconds
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
21	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
22	SS			The SS verifies that the UE does not attempt to attach for 10 minutes .
23	SS			The SS shall release the PS signalling connection.
23a			Void	
24	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
25	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-4
26	->		ROUTING AREA UPDATE COMPLETE	
~~27~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~28~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~ ~~An IMSI Detach must be performed for an UE in Operation Mode A either before or after the PS Detach~~
~~29~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- perform the routing area updating procedure.

UE shall perform the following actions depending on the conditions described below.

Case 1) At step11, 14, 17 and 20, a routing area updating procedure is rejected from SS with the attempt counter less than five,

UE shall:

- repeat the routing area updating procedure after T3311 timeout

Case2) At step22 a routing area updating procedure is rejected from SS with the attempt counter five

At step22, UE shall:

- not initiate a routing area updating procedure.

Case3) At step24, the T3302 expires

UE shall:

- initiate the new routing area updating procedure

12.4.1.6 Routing area updating / abnormal cases / change of cell into new routing area

12.4.1.6.1 Definition

12.4.1.6.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.6.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.6.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C In MCC1/MNC1/LAC1/RAC3 (RAI-5).
All cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 18.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
10		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
				The following messages are sent and shall be received on cell C.
11		SS		Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
12		SS		Cell C is preferred by the UE.
13	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
14	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-5
15	->		ROUTING AREA UPDATE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

17a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
18 19	SS UE		The SS is set in network operation mode II. The UE is set in UE operation mode A (see ICS). Set the cell type of cell C to the "Non-Suitable cell".The test is repeated from step 2 to step 17.
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.1.6.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure.

At step13, when change of cell into a new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

12.4.1.7 Void

12.4.1.8 Routing area updating / abnormal cases / P-TMSI reallocation procedure collision

12.4.1.8.1 Definition

12.4.1.8.2 Conformance requirement

When a P-TMSI REALLOCATION COMMAND message is received by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.8.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a P-TMSI reallocation procedure. The UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'GPRS only attached' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	SS			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
10	<-		P-TMSI REALLOCATION COMMAND	Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
11	UE			The UE ignores the P-TMSI reallocation command.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
~~14~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~15~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~16~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure.

At step11, when a P-TMSI REALLOCATION COMMAND message is received from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the P-TMSI reallocation procedure.
- continue with the routing area updating procedure.

12.4.2 Combined routing area updating

The combined routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A that are IMSI attached for PS and non-PS services. In order to use the combined routing area updating procedure, the network must operate in network operation mode I.

12.4.2.1 Combined routing area updating / combined RA/LA accepted

12.4.2.1.1 Definition

12.4.2.1.2 Conformance requirement

1) If the network accepts the combined routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
2) If the network accepts the combined routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the combined routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.
2) Old P-TMSI / P-TMSI signature is not changed.
3) Mobile terminating CS call is allowed with IMSI.
4) Mobile terminating CS call is allowed with TMSI.

12.4.2.1.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) A combined PS attach procedure is performed. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI, unassigns the TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI and IMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used

2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

3) A combined PS attach procedure is performed. The UE sends an ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI and with a new TMSI. The UE acknowledge the new TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE-SS is performed by the old P-TMSI. For CS calls, the new TMSI is used.

4) The UE is CS paged in order to verify that the TMSI is used for CS calls.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
6a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".

Step	Direction		Message	Comments
	UE	SS		
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
9	->		ROUTING AREA UPDATE COMPLETE	
9a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
10b			Void	
10c			Void	
11	->		SERVICE REQUEST	service type = "paging response"
11aa		SS		The SS starts integrity protection.
11a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
11b			Void	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
13		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
14			Void	
15			Void	
16	->		PAGING RESPONSE	Mobile identity = IMSI
17		SS		The SS releases the RRC connection.
18			Void	
				The following messages are sent and shall be received on cell A.
19		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' No P-TMSI P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
22	->		ROUTING AREA UPDATE COMPLETE	
23	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".

Step	Direction		Message	Comments
	UE	SS		
23a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
23b			Void	
23c			Void	
24	->		SERVICE REQUEST	service type = "paging response"
24aa		SS		The SS starts integrity protection.
24a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
24b			Void	
25	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
26		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
27			Void	
28			Void	
29	->		PAGING RESPONSE	Mobile identity = TMSI-1
30		SS		The SS releases the RRC connection.
31			Void	
~~32~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~32a~~	~~SS~~			~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~33~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~34~~	~~SS~~			~~If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step16, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step20, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step22, UE shall:

- acknowledge the new TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step29, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.4.2.2 Combined routing area updating / UE in CS operation at change of RA

12.4.2.2.1 Definition

12.4.2.2.2 Conformance requirement

PS UE in UE operation mode A that is in an ongoing CS transaction at change of routing area shall initiate the normal routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.1

12.4.2.2.3 Test purpose

To test the behaviour of the UE if the routing area is changed during an ongoing circuit switched transmission.

12.4.2.2.4 Method of test

Initial condition

System Simulator:

One cell, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) is operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A combined PS attach procedure is performed. SS Initiates a CS call with UE in UE Operation Mode A. The routing area change. The UE will perform the normal routing area updating procedure during the ongoing circuit-switched transaction.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				Set the cell type of cell A to the "Serving cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	SS			A CS call is initiated.
7			Void	
8			Void	
8a	<-		UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code.
8b	->		UTRAN MOBILITY INFORMATION CONFIRM	
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9a	SS			The SS starts integrity protection.
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
11	->		ROUTING AREA UPDATE COMPLETE	
11a	SS			The SS releases the PS signalling connection, but keeps the RRC connection.
12	<-		PAGING TYPE2	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	->		SERVICE REQUEST	service type = "paging response"
13a	SS			The SS starts integrity protection.
13b	SS			The SS releases the CS call.
14	SS			The SS initiates the RRC connection release.
14a	->		ROUTING AREA UPDATE REQUEST	Update type = “combined RA/LA updating” or "combined RA/LA updating with IMSI Attach", Old P-TMSI signature=P-TMSI-1 signature, Old Routing area identity = RAI-4, TMSI status = no valid TMSI available
14b	SS			The SS starts integrity protection.
14c	<-		ROUTING AREA UPDATE ACCEPT	Update result = "combined RA/LA updated", No P-TMSI, P-TMSI-3 signature, Routing area identity = RAI-1
~~15~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~

~~15a~~	~~SS~~		~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~16~~	~~-->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~17~~	~~SS~~		~~If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

UTRAN MOBILITY INFORMATION (step 8a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	30
- ATT	1
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	0 (Network Mode of Operation I)
- CN domain specific DRX cycle length coefficient	7

12.4.2.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE has received the new RAI from the SS in the UTRAN MOBILITY INFORMATION message, the UE shall:

- initiate the normal routing area updating procedure.

12.4.2.3 Combined routing area updating / RA only accepted

12.4.2.3.1 Definition

12.4.2.3.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.3.3 Test purpose

Test porpose1

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'IMSI unknown in HLR'.

Test porpose2

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.4.2.3.4 Method of test

Test Procedure1

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message. The SS allocates a P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'IMSI unknown in HLR'
9	->		ROUTING AREA UPDATE COMPLETE	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10a	->		RRC CONNECTION REQUEST	
10b	<-		RRC CONNECTION SETUP	
10c	->		RRC CONNECTION SETUP COMPLETE	
11	->		SERVICE REQUEST	service type = "paging response"
11a	<-		RRC CONNECTION RELEASE	
11b	->		RRC CONNECTION RELEASE COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
13	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
~~14~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~15~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~16~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Test Procedure2

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I. T3212 is set to 6 minutes.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Automatic MM IMSI attach procedure for UE operation mode A UE Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message . The SS allocates a new P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. This procedure is repeated until the routing area updating attempt counter is equal to five. An UE operation mode A UE may perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity. It is further verified that the UE after a successful IMSI attach procedure can perform CS services.

Expected Sequence

Dependent whether the option 'Automatic MM IMSI attach procedure for UE operation mode A UE' is not supported or not, the steps 1-13 or 14-35 apply depending on manufacturer (see ICS).

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a		UE		The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.

Step	Direction		Message	Comments
	UE	SS		
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE COMPLETE	
10				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
13	->		ROUTING AREA UPDATE COMPLETE	
14				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
16	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
17	->		ROUTING AREA UPDATE COMPLETE	
18				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311

Step	Direction		Message	Comments
	UE	SS		
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
20	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
21	->		ROUTING AREA UPDATE COMPLETE	
22				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
23	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
24	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
25	->		ROUTING AREA UPDATE COMPLETE	
26				The routing area updating attempt counter =5. The combined routing area updating procedure is reinitialised at the expiry of T3311
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach' Stop the sequence.
28a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B
29	UE			The UE is set in UE operation mode A and automatic MM IMSI attach procedure is indicated (see ICS).
30	UE			The UE is powered up or switched on and initiates an attach (see ICS).
31	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
31a	<-		AUTHENTICATION AND CIPHERING REQUEST	
31b	->		AUTHENTICATION AND CIPHERING RESPONSE	
31c	SS			The SS starts integrity protection.
32	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4

Step	Direction		Message	Comments
	UE	SS		
33	->		ATTACH COMPLETE	
34	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell ". (see note)
35	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
36	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
37	->		ROUTING AREA UPDATE COMPLETE	
38				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
39	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
40	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
41	->		ROUTING AREA UPDATE COMPLETE	
42				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
43	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
44	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
45	->		ROUTING AREA UPDATE COMPLETE	
46				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
47	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
48		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
49		->	ROUTING AREA UPDATE COMPLETE	
50				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
51		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
52		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
53		->	ROUTING AREA UPDATE COMPLETE	
54				The routing area updating attempt counter =5.
55	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI-1. Steps 56 - 62 are only performed if the UE has performed the Registration Procedure in step 55.
56		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
57		->	RRC CONNECTION REQUEST	
58		<-	RRC CONNECTION SETUP	
59		->	RRC CONNECTION SETUP COMPLETE	
60		->	PAGING RESPONSE	Mobile identity = TMSI-1
61		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
62		->	RRC CONNECTION RELEASE COMPLETE	
~~63~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~64~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRS detach'~~
~~65~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.3.5 Test requirements

Test requirements for Test Procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step13, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test Procedure2

At step3 and 31, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step6 and 35, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step11, 15, 19 and 23, UE shall:

- re-initiate the combined routing area updating procedure.

At step39, 43, 47 and 51, UE shall:

- re-initiate the combined routing area updating procedure.

At step55, UE shall:

- perform MM location updating procedure.

At step60, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.4.2.3a Void

12.4.2.4 Combined routing area updating / rejected / PLMN not allowed

12.4.2.4.1 Definition

12.4.2.4.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

   1.1 not perform combined GPRS attach when switched on in the same location area or PLMN, except when the PLMN identity is equal to the HPLMN.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature, TMSI CKSN and LAI.

1.3 store the PLMN in the 'forbidden PLMN list', except when the PLMN identity is equal to the HPLMN.

-2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 3.1.

12.4.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined routing area updating procedure of the UE with the cause 'PLMN not allowed'.

12.4.2.4.4 Method of test

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC2 (RAI-10), cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2) and cell E in MCC1/MNC3/LAC1/RAC1 (RAI-11).

The PLMN containing Cell E is equivalent to the PLMN that contains Cell A.
All four cells are operating in network operation mode I

The HPLMN is different from MCC1/MNC2.

Sintrasearch and Sintersearch values for cells A, B, D and E are 20 dB.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell E will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same PLMN. The SS checks that the UE does not perform IMSI attach if activated in the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-8 P-TMSI Signature = P-TMSI-8 signature Routing area identity = RAI-8 MS identity = TMSI-1 Equivalent PLMN: MCC = 1, MNC=3
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B and cell E.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". Set the cell type of cell E to the "Suitable neighbour cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating'Old P-TMSI Signature= P-TMSI-8 signature Old Routing area identity = RAI-8 Valid TMSI is available. TMSI status = valid TMSI available or IE not present Mobile identity = P-TMSI-8
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PLMN not allowed'
10a		SS		The SS releases the RRC connection.
10b				Cell E is preferred by the UE Step 11 and 11a are only performed by an UE which will not initiate a PS attach automatically (see ICS)
11 conditional	UE		Registration on CS	See TS 34.108 Location Update Procedure is initiated from the UE.
11a conditional				The UE initiates an attach by MMI or by AT command.

Step	Direction		Message	Comments
	UE	SS		
12		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12a	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
13	<-		AUTHENTICATION AND CIPHERING REQUEST	
14	->		AUTHENTICATION AND CIPHERING RESPONSE	
14a		SS		The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-11 P-TMSI Signature = P-TMSI-11 signature Routing area identity = RAI-11 MS identity = TMSI-2 Equivalent PLMN: MCC = 1, MNC=2
16	->		ATTACH COMPLETE	
17		SS		The SS releases the RRC connection.
18	<-		PAGING TYPE1	Paging is sent on cell A. Mobile identity= P-TMSI-11 P-TMSI-11 signature Paging order for PS services
18a				The UE shall not initiate an RRC connection. This is checked during 3 seconds.
19	<-		PAGING TYPE1	Paging is sent on cell B. Mobile identity = TMSI-2 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21			Void	
22			Void	
23			Void	
24			Void	
25			Void	
26			Void	
27		SS		The following messages are sent and shall be received on cell D. Set the cell type of cell B and E to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
28	UE			Cell D is preferred by the UE.
28a			Void	
29			Void	
29a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
30	->		ROUTING AREA UPDATE REQUEST	Update type = 'combined RA/LA updating' Old P-TMSI Signature= P-TMSI-11 signature Old Routing area identity = RAI-11 TMSI status = valid TMSI available or IE not present
30a		SS		The SS starts integrity protection.
31	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'combined RA/LA updated ' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2

Step	Direction		Message	Comments
	UE	SS		
32	->		ROUTING AREA UPDATE COMPLETE	
~~33~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~34~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'~~
~~35~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall initiate a PS attach procedure to cell E.

At step18, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step19, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the combined routing area update procedure.

12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area

12.4.2.5a.1 Definition

12.4.2.5a.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1 shall not perform combined PS attach when in the same location area.

   1.2 shall store the LA in the 'forbidden location areas for roaming'.

   1.3 shall perform a routing area update when entering in a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of

service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current update status is different from "IDLE NO IMSI".

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 4.5.2.

12.4.2.5a.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this location area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful combined routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.2.5a.4 Method of test

12.4.2.5a.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this location area'. A new attempt for a combined PS attach is not possible. Successful combined routing area updating procedure is performed in another location area. The UE is moved back to the 1st location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
9a		SS		SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
18a			Void	
19			Void	

Step	Direction		Message	Comments
	UE	SS		
19a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' or 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2 MS identity = TMSI-1
22	->		ROUTING AREA UPDATE COMPLETE	
22a		SS		The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a		SS		The SS starts integrity protection.
28		SS		The SS releases the RRC connection
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating background call"
30a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o		SS		The SS starts integrity protection.
31a		SS		The SS releases the RRC connection.
31b			Void	
				The following messages are sent and shall be received on cell B.
32		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
33		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
34	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
35		UE		No response from the UE to the request. This is checked for 10 seconds.

NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

12.4.2.5a.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
9a		SS		The SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
17a		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
18	UE			The UE gets the USIM replaced, is powered up or switched on.

Step	Direction		Message	Comments
	UE	SS		
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
19	UE			The UE initiates an attach (see ICS) by MMI or AT command.
19a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI_2 TMSI status = valid TMSI available or IE not present
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 MS identity = TMSI-1
22	->		ATTACH COMPLETE	
22a	SS			The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a	SS			The SS starts integrity protection.
28	SS			The SS releases the RRC connection.
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging cause = "Terminating background call"
30a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o	SS			The SS starts integrity protection.
31a	SS			The SS releases the RRC connection.
31b			Void	
~~32~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~33~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~34~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.5a.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence

At step12, when the SS rejects the combined routing area update procedure with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined RA/LA updating procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step35, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.2.5b Combined routing area updating / rejected / No Suitable Cells In Location Area.

12.4.2.5b.1 Definition

12.4.2.5b.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 store the LA or the PLMN identity in the 'forbidden location areas for roaming'.

   1.2 search for a suitable cell in a different location area on the same PLMN.

2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5b.3 Test purpose

To test the behaviour of the UE if the network rejects a combined routing area updating procedure of the UE with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.2.5b.4 Method of test

Initial condition

System Simulator:

Five cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell E in MCC1/MNC2/LAC1/RAC1 (RAI-5).

All five cells are operating in network operation mode I.

The PLMN contains Cell A, B and D is equivalent to the PLMN that contains Cell E.

Sintrasearch and Sintersearch values for cells A, B, D and E are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell D will be mapped to Cell 3 as found in TS 34.108 clause 6.1.4.2.

iii) Cell E will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall performa combined routing area update procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 MS identity = IMSI Equivalent PLMN: MCC = 1, MNC=2
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Non-Suitable cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
8a		SS		The SS releases the RRC connection. The following message are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = P-TMSI-1
10	<-		ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updating with IMSI attach' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMN: MCC = 1, MNC=2
11	->		ROUTING AREA UPDATE COMPLETE	
11a		SS		The SS releases the RRC connection.

12	SS		Set the cell type of cell D to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell E to the "Suitable neighbour cell". (note) The SS deactivates Cell B and activates Cell D and Cell E The SS configures power level of each Cell as follows. Cell D > Cell E
13			Cell D is preferred by the UE.
14	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
15	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
15a	SS		The SS releases the RRC connection.
16			The following message are sent and shall be received on cell E.
17	->	ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = IMSI
18	<-	ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-5 Equivalent PLMN: MCC=1. MNC=2
19	->	ROUTING AREA UPDATE COMPLETE	
~~20~~	~~SS~~		~~The SS releases the RRC connection.~~
~~21~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRSdetach'~~
~~22~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell", "Serving cell" and "Non-Suitable cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure.

At step 8, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the combined routing area update procedure.

At step 15, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step 17, when the UE enters a suitable cell in a different but equivalent PLMN (MCC=1, MNC=2), UE shall:

- perform the combined routing area update procedure.

12.4.2.5c Combined routing area updating / rejected / Location area not allowed

12.4.2.5c.1 Definition

12.4.2.5c.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'Location area not allowed', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete any TMSI, LAI and ciphering key sequence number.
- store the LAI in the list of "forbidden location areas for regional provision of service"
- not delete the list of "equivalent PLMNs".
- perform a cell selection.

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.2.5c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Location area not allowed'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2	SS			The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5a	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = Location area not allowed '
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	UE			The UE performs cell selection.
				The following messages are sent and shall be received on cell C.
15	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
16	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 MS identity = TMSI-2 Equivalent PLMNs = MCC1,MNC1
17	->		ATTACH COMPLETE	

~~18~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~19~~	~~-->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'~~
~~20~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5c.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined GPRS/IMSI attached' to the equivalent cell.

12.4.2.5d Combined routing area updating / rejected / PS services not allowed in this PLMN

12.4.2.5d.1 Definition

12.4.2.5d.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for GPRS service" list.
- not delete the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.2.5d.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell C will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-8
9	<-		ROUTING AREA UPDATE REJECT	GMM cause ='GPRS services not allowed in this PLMN'
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
				The following messages are sent and shall be received on cell C.
14	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
15	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 MS identity = TMSI-2 Equivalent PLMNs = MCC1,MNC1
16	->		ATTACH COMPLETE	

~~17~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~18~~	~~-->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'~~
~~19~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5d.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined GPRS/IMSI attached' to the equivalent cell.

12.4.2.6 Combined routing area updating / abnormal cases / access barred due to access class control

12.4.2.6.1 Definition

12.4.2.6.2 Conformance requirement

1) The UE shall not perform combined routing area updating procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the combined routing area updating procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (cell is changed).

12.4.2.6.4 Method of test

12.4.2.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred on Cell B.

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has Access Class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has Access Class x barred.
Both cells are operating in network operation mode I.

User Equipment:

The UE has valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

The SS indicates that access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The access class x is not barred anymore.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
~~13~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~14~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~15~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell B.

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x not barred.
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
9		SS		Set the cell type of cell B to the "Suitable neighbour cell ". Set the cell type of cell C to the "Serving cell". (see note)
10	UE			Cell C is preferred by the UE.
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
12		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
13		->	ROUTING AREA UPDATE COMPLETE	
~~14~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~15~~		~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~16~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.6.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred , UE shall:

- not perform the combined routing area updating procedure.

At step10, when the access class x is not barred, UE shall:

- perform the combined routing area updating procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred UE shall:

- not perform the combined routing area updating procedure.

At step11, when the serving cell is changed, UE shall:

- perform the combined routing area updating procedure.

12.4.2.7 Combined routing area updating / abnormal cases / attempt counter check / procedure timeout

12.4.2.7.1 Definition

12.4.2.7.2 Conformance requirement

1) When a T3330 timeout has occurred during a routing area updating procedure, the UE shall repeat the routing area updating procedure after T3330 timeout until the procedure is repeated five times.

2) When a routing area updating procedure is repeated five times, the routing area updating attempt counter is incremented and five more routing area updating procedures are performed. This procedure is repeated until the routing area updating attempt counter is five, the UE shall then start timer T3302.

3) When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.7.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.2.7.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure (routing area updating attempt counter zero). The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter one) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter two) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter three) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter four) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and as the routing area updating attempt counter is five. T3302 is started.

The UE may perform a Location Update procedure.

The UE initiates a routing area updating procedure with routing area updating attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; 15 seconds.

T3330; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE. K = 1.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k (k is not visible. It is only used for clarifying the sequence.) Retransmission counter = 0
9	SS			No response is given from the SS.
10	SS			The SS verifies that the time between the RA update requests is T3330seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 1
12	SS			No response is given from the SS.
13	SS			The SS verifies that the time between the RA update requests is T3330seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 2
15	SS			No response is given from the SS.
16	SS			The SS verifies that the time between the RA update requests is T3330seconds

Step	Direction		Message	Comments
	UE	SS		
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 3
18	SS			No response is given from the SS.
19	SS			The SS verifies that the time between the RA update requests is T3330seconds
20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 4
21	SS			No response is given from the SS.
22	SS			The SS verifies that the time between the RA update requests is T3311 + T3330 seconds.
23	SS			Step 8 – 22 is repeated four times with k = 2, k = 3, k = 4 and k = 5
23a optional	UE		Registration on CS	The UE may perform a normal location updating procedure. See TS 34.108
24	SS			The SS verifies that the time between the RA update requests is T3302 + T3330 seconds
25	->		ROUTING AREA UPDATE REQUEST	Update type = - 'combined RA/LA updating with IMSI attach' (If Step23a is performed) - 'combined RA/LA updating' (If Step23a is not performed) Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
26	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
27	->		ROUTING AREA UPDATE COMPLETE	
~~28~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~29~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~30~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case 1) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter less than five

At step11, 14, 17 and 20, UE shall:

- repeat the combined routing area updating procedure after the timer T3330 timeout

Case2) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter five

At step 22, UE shall:

- not repeat the combined routing area updating procedure.

Case 3) A timer T3311 timeout has occurred and the Routing area attempt counter is less than five,

At step23, UE shall:

- repeat the combined routing area updating procedure

Case 4) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter five and the Retransmission counter five.

At step24, UE shall:

- not initiate a routing area updating procedure.

Case5) The timer T3302 expires

At step25, UE shall:

- initiate the new routing area updating procedure

12.4.2.8 Combined routing area updating / abnormal cases / change of cell into new routing area

12.4.2.8.1 Definition

12.4.2.8.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.8.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC3 (RAI-5).
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area. The UE shall not increment the attempt counter.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		No response id given from the SS.
				The following messages are sent and shall be received on cell C.
10		SS		Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11	UE			The RF level of cell B is lowered, and the RF level of cell C is increased, until cell C is preferred by the UE.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-5
14	->		ROUTING AREA UPDATE COMPLETE	
~~15~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~16~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS/IMSI detach'~~

	~~17~~	~~SS~~		~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure.

At step12, when change of cell into new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

12.4.2.9 Void

12.4.2.10 Combined routing area updating / abnormal cases / PS detach procedure collision

12.4.2.10.1 Definition

12.4.2.10.2 Conformance requirement

1) When a detach request is received with cause 'GPRS detach' or 'combined GPRS/IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

2) When a detach request is received with cause 'IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the detach request and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.10.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.10.4 Method of test

12.4.2.10.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'GPRS detach' or 'combined GPRS/IMSI detach'. The UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach not required'
11	->		DETACH ACCEPT	
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.10.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'IMSI detach'. The UE shall ignore the detach procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 'IMSI detach'
11	UE			The UE ignores the DETACH REQUEST message and continue the routing area updating procedure.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
~~14~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~15~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~16~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.2.10.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, when the UE receives a DETACH REQUEST message with cause 'GPRS detach' or 'combined GPRS/IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- terminate the routing area updating procedure
- continue with the PS detach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, the UE receives a DETACH REQUEST message with cause 'IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the detach request procedure.
- continue with the routing area updating procedure.

12.4.3 Periodic routing area updating

12.4.3.1 Periodic routing area updating / accepted

12.4.3.1.1 Definition

12.4.3.1.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.1.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 11.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
5b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
7		SS		The SS verifies that the time between the attach and the periodic RA updating is T3312
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
8a		SS		The SS releases the RRC connection.
9	~~UE~~		Void	~~The UE is switched off or power is removed (see ICS).~~
9a		~~SS~~	Void	~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
10	~~->~~		~~DETACH REQUEST~~Void	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRSdetach'~~
10a		~~SS~~	Void	~~If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~
11				The SS is set in network operation mode II.
12	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 10.

Specific message contents

None.

12.4.3.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.2 Periodic routing area updating / accepted / T3312 default value

12.4.3.2.1 Definition

12.4.3.2.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.2.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. After 54 minutes, a periodic routing area updating procedure is initiated by the UE.

T3312; default value 54 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c	SS			The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 T3312 = 54 min
4	->		ATTACH COMPLETE	
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present.
6	SS			The SS verifies that the time between the attach request and the periodic RA updating is T3312
7	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
~~8~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~9~~	~~—>~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, combined GPRS/IMSI detach'~~
~~10~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

None.

12.4.3.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step5, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.3 Periodic routing area updating / no cell available / network mode I

12.4.3.3.1 Definition

12.4.3.3.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode I, then the UE shall perform a combined routing area update procedure indicating 'combined RA/LA updating with IMSI attach'.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.3.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.3.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Cell A is operating in network operation mode II and cell B is in network operation mode I.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a routing area updating procedure is performed immediately.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2		SS		The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
6	->		ATTACH COMPLETE	
7		SS		After 5 minutes, the signal strength is lowered until the UE has lost contact with the SS. Set the cell type of cell A to the "non-suitable cell".(see note)
8		SS		Wait 2 minutes.
				The following messages are sent and shall be received on cell B.
9		SS		Set the cell type of cell B to the "Serving cell". (see note)
10	UE			Cell B is preferred by the UE.
11	UE			The UE immediately starts a combined RA updating procedure
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted.
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature MS identity = TMSI-2 Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
~~15~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~16~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/ IMSI detach'~~
~~17~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.3.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE is both IMSI attached for PS and non-PS service , and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell that supports PS and the network is in network oration mode I, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

12.4.3.4 Periodic routing area updating / no cell available

12.4.3.4.1 Definition

12.4.3.4.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode II, then the UE shall perform a periodic routing area update procedure and a periodic location update procedure.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.4.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a periodic routing area updating procedure is performed immediately (no periodic location update procedure is performed as T3212=infinity).

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
1a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
2	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c		SS		The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
4	->		ATTACH COMPLETE	
5-12			(void)	
13		SS		After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
14		SS		After 2 minutes, the signal strength is increased until the UE have got contact with the SS.
15	UE			The UE immediately start the periodic RA updating procedure
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
~~18~~	~~UE~~			~~The UE is switched off or power is removed (see ICS).~~
~~18a~~			~~IMSI DETACH INDICATION~~	~~Message not sent if power is removed~~ ~~This is applicable only for UE in UE operation mode A.~~
~~19~~	~~->~~		~~DETACH REQUEST~~	~~Message not sent if power is removed.~~ ~~Detach type = 'power switched off, GPRSdetach'~~
~~20~~	~~SS~~			~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~

Specific message contents

RRC System information block type 1

Information element	CommentValue
T3212 (Periodical Location updating)	Infinity

12.4.3.4.5 Test requirements

At step2, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, when the UE is both IMSI attached for PS and non-PS service, and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell in the same RA that supports PS and that indicates that the network is in network operation mode II, UE shall:

- perform the periodic routing area updating procedure indicating "Periodic updating".

12.5 P-TMSI reallocation

12.5.1 Definition

12.5.2 Conformance requirement

1) A User Equipment shall acknowledge a new P-TMSI when explicitly allocated.

2) The P-TMSI shall be updated on the USIM when the User Equipment is correctly deactivated in accordance with the manufacturer's instructions.

3) A User Equipment shall use the given P-TMSI in further communication with the network.

Reference

3GPP TS 24.008 clause 4.7.6.

12.5.3 Test purpose

To verify that the UE is able to receive and acknowledge a new P-TMSI by means of an explicit P-TMSI reallocation procedure.

To verify that the UE has stored the P-TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in the attach procedure.

12.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No (only if mode A not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An explicit P-TMSI reallocation procedure is performed (P-TMSI reallocation command sent from the SS and acknowledged from the UE by P-TMSI reallocation complete). The UE is PS detached and switched off. Its power supply is interrupted for 10 seconds. The power supply is resumed and then the UE is switched on. A PS attach procedure is performed with the given P-TMSI as identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		P-TMSI REALLOCATION COMMAND	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
7	->		P-TMSI REALLOCATION COMPLETE	
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
9a	SS			If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
10	UE			Ensure the power is removed from the UE for at least 10 seconds
11	UE			The UE is powered up or switched on and initiates an attach (see ICS).
11a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
12a	<-		AUTHENTICATION AND CIPHERING REQUEST	
12b	->		AUTHENTICATION AND CIPHERING RESPONSE	
12c	SS			The SS starts integrity protection.
13	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-3 signature Routing area identity = RAI-1
13a	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
14	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause = "Terminating interactive call".

15	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16		Void	
17		Void	
18	->	SERVICE REQUEST	service type = "paging response"
18a	SS		The SS starts integrity protection.
19	SS		The SS releases the RRC connection.
20		Void	
~~21~~	~~UE~~		~~The UE is switched off or power is removed (see ICS).~~
~~21a~~	~~SS~~		~~SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".~~
~~22~~	~~->~~	~~DETACH REQUEST~~	~~Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'~~
~~23~~	~~SS~~		~~If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .~~

Specific message contents

None.

12.5.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE receives P-TMSI REALLOCATION COMMAND message from SS, UE shall:

- acknowledge the new P-TMSI by sending P-TMSI REALLOCATION COMPLETE message.

At step12, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step18, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.6 PS authentication

12.6.1 Test of authentication

The purpose of this procedure is to verify the user identity. A correct response is essential to guarantee the establishment of the connection. If not, the connection will drop.

12.6.1.1 Authentication accepted

12.6.1.1.1 Definition

12.6.1.1.2 Conformance requirement

A User Equipment shall correctly respond in an authentication and ciphering procedure by sending a response with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the authentication and ciphering procedure.

12.6.1.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in both cells.

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The SS checks the value RES sent by the UE in the AUTHENTICATION AND CIPHERING RESPONSE message.

The UE initiates a routing area updating procedure and the SS checks the value of the PS Ciphering Key Sequence Number sent by the UE in the ROUTING AREA REQUEST message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7		SS		The SS checks the RES value and starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
9	->		ATTACH COMPLETE	
9a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
10		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
12		SS		The value of PS-CKSN is checked. Integrity protection is started.
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
16a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)

18	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 16a.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.1.5 Test requirements

At steps 3a and 10a the UE shall transmit an RRC CONNECTION REQUEST message with the IE "Establishment cause" set to "Registration".

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message form SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

At step11, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.2 Authentication rejected by the network

12.6.1.2.1 Definition

12.6.1.2.2 Conformance requirement

Upon receipt of an AUTHENTICATION AND CIPHERING REJECT message, the UE shall set the PS update status to GU3 ROAMING NOT ALLOWED and shall delete the P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number stored.

The USIM shall be considered as invalid until switching off or the USIM is removed.

If the AUTHENTICATION AND CIPHERING REJECT message is received, the UE shall abort any GMM procedure, shall stop the timers T3310 and T3330 (if running) and shall enter state GMM-DEREGISTERED.

Reference

3GPP TS 24.008 clauses 4.7.7.5.

12.6.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the authentication and ciphering procedure.

12.6.1.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The test sequence is repeated for K = 1, 2.

A complete PS attach procedure is performed. The SS rejects the following authentication and ciphering procedure. The UE is paged with its IMSI and shall not respond.
The Cell is changed into a new Routing Area.

The SS checks that the UE does not perform normal routing area updating.

The SS then checks that the UE does not perform a PS detach.

The SS checks that the UE does not perform a PS Attach procedure.

Expected Sequence

The test sequence is repeated for k = 1, 2

For k =1, the UE is set in UE operation mode C. If MS operation mode C not supported then k = 2.

For k = 2 the UE is set in UE operation mode A.

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
2b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4			Void	
5			Void	
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
7	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
8	<-		AUTHENTICATION AND CIPHERING REJECT	
8a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
9	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell B.
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12	UE			Cell B is preferred by the MS.
13	UE			No ROUTING AREA UPDATE REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			The UE is switched off (see ICS).
17	SS			No DETACH REQUEST sent to the SS (SS waits 30 seconds).
18				The UE is powered up or switched on and initiates an attach (see ICS). Step 19 is only performed for k =2
19	UE		Registration on CS	Parameter mobile identity is IMSI See TS 34.108
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4

22	->	ATTACH COMPLETE	
22a	SS		The SS releases the RRC connection.
23	UE		The UE is switched off or power is removed. (see ICS)
23a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
24	->	DETACH REQUEST	Message not sent if power is removed.
24a	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
25	UE		If k=1 then the test is repeated for k=2.
NOTE: The definitions for "Non-Suitable celll" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.2.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REJECT message, UE shall:

- not respond paging message for PS domain.

At step13, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- not perform normal routing area updating.

At step17, when the UE is switched off, UE shall:

- not perform PS detach procedure.

12.6.1.3 Authentication rejected by the UE

12.6.1.3.1 GMM cause 'MAC failure'

12.6.1.3.1.1 Definition

12.6.1.3.1.2 Conformance requirement

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'MAC failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.1.3 Test purpose

To test the behaviors of the UE, when the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid.

12.6.1.3.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

The MAC (Message Authentication Code) code, which is included in AUTHENTICATION AND CIPHERING REQUEST, is invalid value.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'MAC failure' to the SS.

The SS initiates an identification procedure, upon receipt of a failure message with reject cause 'MAC failure'.

After the identification procedure is complete, the SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 25.
3	UE			
4				The following messages are sent and shall be received on cell A.
5	UE			The UE is powered up or switched on and initiates an attach (see ICS).
5a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
7	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Invalid Message Authentication Code (MAC).
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
9a	<-		IDENTITY REQUEST	Identity type = IMSI
9b	->		IDENTITY RESPONSE	Mobile identity = IMSI
10	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CSKN-1
11	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
12		SS		The SS checks the RES value and starts integrity protection.
13			Void	
14			Void	
15			Void	
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
18		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
18a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
20		SS		The SS checks the value of PS-CKSN and starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
22	->		ROUTING AREA UPDATE COMPLETE	
23	UE			The UE is switched off or power is removed (see ICS).

24	->	DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
24a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
25	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 24.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.3.1.5 Test requirements

At step6, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST with Invalid Message Authentication Code, UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS

At step11, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message (containing a valid MAC) from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step9b, when the UE receives the IDENTITY REQUEST message with Identity type = IMSI from SS, UE shall:

- send the IDENTITY RESPONSE message with Mobile identity = IMSI to SS.

12.6.1.3.2 GMM cause 'Synch failure'

12.6.1.3.2.1 Definition

12.6.1.3.2.2 Conformance requirement

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'Synch failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.2.3 Test purpose

To test the behaviors of the UE, when the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range.

12.6.1.3.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'synch failure' to the SS.

SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 21.
3	UE			The following messages are sent and shall be received on cell A. The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. SQN is out of range.
6			Void	
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause = 'Synch failure' AUTS parameter
8		SS		set new authentication vectors. (re-synchronisation)
9	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CKSN-1
10	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
11		SS		The SS checks the RES value and starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
13a	SS			The SS releases the RRC connection.
14	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
16	SS			The SS checks the value of PS-CKSN and starts integrity protection
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
20a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.6.1.3.2.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step7, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message(SQN is out of range.), UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS

At step9, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step15, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.3.3 Authentication rejected by the UE / fraudulent network

12.6.1.3.3.1 Definition

12.6.1.3.3.2 Conformance requirement

R99 and REL-4:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occur:

   - After sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;

   - Upon receipt of the second AUTHENTICATION & CIPHERING REQUEST message from the network while the T3318 is running and the MAC value cannot be resolved.

   When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP 24.008 clause 4.7.7.6.1.

2. In addition to the cases specified in subclause 4.7.7.6, the UE may deem that the network has failed the authentication check after any combination of three consecutive authentication failures, regardless whether 'MAC failure', 'invalid SQN', or 'GSM authentication unacceptable' was diagnosed. The authentication failures shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the UE, while the timer T3318 or T3320 started after the previous authentication failure is running.

   If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 04.18).

Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

REL-5 and later releases:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occurs:

   - after sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;

   - the MS detects any combination of the authentication failures: "MAC failure", "invalid SQN", and "GSM authentication unacceptable", during three consecutive authentication challenges. The authentication challenges shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the MS, while the timer T3318 or T3320 started after the previous authentication failure is running.

   When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP TS 24.008 subclause 4.7.7.6.1.

2. If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 44.018).

Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

12.6.1.3.3.3 Test purpose

R99 and REL-4

To test UE treating a cell as barred:

1. when the network sends the second or third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

REL-5 or later release:

To test UE treating a cell as barred:

1. when the network sends the third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

12.6.1.3.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1(RAI-1), cell B in MCC1/MNC1/LAC1/RAC2(RAI-2).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

Two cells are configured. Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

During the attach procedure, the SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS repeats a second time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

For R99 and REL-4: SS waits 30 seconds. If the UE sends an AUTHENTICATION AND CIPHERING FAILURE message during this time then the the SS repeats the authentication procedure a third time and then waits 30 seconds. The UE moves into idle mode and do not make any access attempt on Cell A.

For REL-5 or later relaese: The SS repeats a third time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message. The UE moves into idle mode and do not make any access attempt on Cell A.

The UE shall attempt to attach to cell B. The SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST

message. The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS waits for T3318 to expire.

The UE shall treat now both cells as barred and shall not attempt to access the network, even if the user triggers the UE to perform an attach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
				The following messages are sent and shall be received on cell A.
2	UE			The UE is powered up or switched on and initiates an attach procedure.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
4	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
5	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure' R99 and REL-4: In case message is not received within 30s then SS should continue from step 9.
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC). R99 and REL-4: Optional step
7b			Void	
8		SS		SS verifies that the UE does not attempt to access the network for 30s. R99 and REL-4: Optional step
9		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
				UE shall attempt an attach on cell B. The following messages are sent and shall be received on cell B.
10	UE			The UE initiates an attach by MMI or AT command.
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
13	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
14		SS		SS waits T3318 (20s)
15		SS		SS verifies that the UE does not attempt to access the network for 30s.
16	UE			The UE initiates an attach by MMI or AT command.
17		SS		SS verifies that the UE does not attempt to access the network for 30s.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.6.1.3.3.5 Test requirements

At step3, when the UE is powered on or switched on, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step4, when the UE have received the first AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

For R99 and REL-4 UE:

Alternative 1:

- After step 6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

Alternative 2:

- After step6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and

- After step 7a , when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

For REL-5 UE:

- After step 6, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) from the network while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and

- After step 7a, when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

At step 11, when the activated cell is changed from cell A to cell B, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step 12, when the UE have received the AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step 17, when the timer T3318 have expired, the UE shall:

- not attempt to access the network.

12.6.2 Void

12.7 Identification procedure

The purpose of this procedure is to check that the UE gives its identity as requested by the network. If this procedure does not work, it will not be possible for the network to rely on the identity claimed by the UE.

12.7.1 General Identification

12.7.1.1 Definition

12.7.1.2 Conformance requirement

1) When requested by the network the User Equipment shall send its IMSI.

2) When requested by the network the User Equipment shall send its IMEI as stored in the Mobile Equipment.

3) When requested by the network the User Equipment shall send its IMEISV as stored in the Mobile Equipment.

Reference

3GPP TS 24.008 clauses 4.7.8

12.7.1.3 Test purpose

To verify that the UE sends identity information as requested by the system. The following identities can be requested: IMSI, IMEI and IMEISV.

12.7.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS requests identity information from the UE:

- IMSI
- IMEI
- IMEISV

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 14.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4			Void	
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
5a	->		AUTHENTICATION AND CIPHERING RESPONSE	
5b		SS		The SS starts ciphering and integrity protection.
6	<-		IDENTITY REQUEST	Identity type = IMSI
7	->		IDENTITY RESPONSE	Mobile identity = IMSI
8	<-		IDENTITY REQUEST	Identity type = IMEI
9	->		IDENTITY RESPONSE	Mobile identity = IMEI
10	<-		IDENTITY REQUEST	Identity type = IMEISV
11	->		IDENTITY RESPONSE	Mobile identity = IMEISV
11a	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
11b	->		ATTACH COMPLETE	
11c		SS		The SS releases the RRC connection.
12	UE			The UE is switched off or power is removed (see ICS).
12a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not received if power is removed).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
13a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
14	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 13a.

Specific message contents

None.

12.7.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 12a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

At step9, when the SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

At step11, when the SS requests an IMEISV with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEISV.

12.8 GMM READY timer handling

12.8.1 Definition

12.8.2 Conformance requirement

If a READY timer value is received by an UE capable of both UMTS and GSM in the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, then the received value shall be stored by the UE in order to be used at an intersystem change from UMTS to GSM.

Reference

3GPP TS 24.008 clause 4.7.2.1

12.8.3 Test purpose

To verify that READY timer value received in UTRA can be used in GSM.

12.8.4 Method of test

12.8.4.1 Test procedure

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A (UTRAN) in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B (GSM) in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Cell B is in neigbour cell list of cell A.
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in cell A (UTRAN).
The value of ATT flag in SIB3 IE “Control Channel Description” is set to value “0” in cell B (GSM).

In SIB3 and SIB4 the IE “$S_{searchRAT}$”, is set to value “20dB” in cell A (UTRAN).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

UE supports both GSM/GPRS and UTRAN Radio Access Technologies Yes/No
UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs Yes/No

UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An attach is performed.

T3314; set to 60 seconds

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Cell B is switched off. (see note)
2	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C. The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3314 = 60 seconds T3312=6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell".Set the cell type of cell B to the "Serving cell".
7	UE			UE establish cell reselection to GSM system
				The following messages are received on Cell B (GERAN)
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
10	->		ROUTING AREA UPDATE COMPLETE	
11		SS		The SS verifies that the time between the end of Step 10 and the periodic RA updating is Ready Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Mobile identity=P-TMSI-1 Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
13	<-		ROUTING AREA UPDATE ACCEPT	Update type = 'RA updated'
14	UE			UE is swithed off or power is removed (see ICS)
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.8.5 Test requirements

At step4, when the UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

At step12, UE shall establish periodic Routing Area Update after Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%).

12.9 Service Request procedure (UMTS Only)

12.9.1 Service Request Initiated by UE Procedure

12.9.1.1 Definition

12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

12.9.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE in PMM-IDLE state sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receives the SERVICE REQUEST message, the SS performs authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
6a	SS			The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9	->		Void	
9a	SS			The SS releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a			Void	
11			Void	
11a			Void	
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

12.9.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE has any signalling message (e.g. for SM or SMS) that requires security protection, the UE shall:

- send the SERVICE REQUEST message with service type indicated "signalling".

12.9.2 Service Request Initiated by Network Procedure

12.9.2.1 Definition

12.9.2.2 Conformance requirement

When the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall send the SERVICE REQUEST message to the network.

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.2

12.9.2.3 Test purpose

To test the behavior of the UE if the UE receives the paging request for PS domain service from the network.

12.9.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE is in PMM-IDLE state. The SS pages the UE by sending a Paging message to the UE.

b) The UE sends a SERVICE REQUEST message to the SS. Service Type specifies Paging Response. The Service Request is carried over the radio in an RRC Direct Transfer message.

c) After the SS receives the SERVICE REQUEST message from the UE, SS initiates an authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched in and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call"
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "Paging response"
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
9a	SS			SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

12.9.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating interactive Call".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step 7, when the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall:

- send the SERVICE REQUEST message with service type indicated "paging response".

12.9.3 Service Request / rejected / Illegal MS

12.9.3.1 Definition

12.9.3.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Illegal MS", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and enter state GMM DEREGISTRATED. A UE operating in MS operation A shall in addition to set the update status to U3 ROAMING NOT ALLOWED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. A UE operating in MS operation A shall in addition delete any TMSI, LAI and ciphering key sequence number.
3) consider the USIM as invalid for PS service until switched off or the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.3.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Illegal MS".

12.9.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1, RAI-1 and IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #3(Illegal MS).

c) After the UE receives the SERVICE REJECT message with the cause value #3(Illegal MS), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the power of the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "Illegal MS"
9a	SS			The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
14b	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
17a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "Illegal MS"
20a		SS		The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
23	UE			If possible (see ICS) USIM replacement is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed
24	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c		SS		The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "Illegal MS"
32			VOID	
33			VOID	
34		SS		The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

None.

12.9.3.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.4 Service Request / rejected / PS services not allowed

12.9.41 Definition

12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "GPRS services not allowed", the UE shall:

1) set the GPRS update state to GU3 ROAMING NOT ALLOWED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
3) consider the USIM as invalid for PS service until the UE is switched off or until the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.4.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "GPRS services not allowed in this PLMN".

12.9.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #7(GPRS services not allowed).

c) After the UE receives the SERVICE REJECT message with the cause value #7(GPRS services not allowed), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Old P-TMSI signature=Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9a	SS			The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)

Step	Direction		Message	Comments
	UE	SS		
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
20a	SS			The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
23	UE			The UE gets the USIM replaced, is powered up or switched on.
24			Void	
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
32			VOID	
33			VOID	
34	SS			The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

12.9.4.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.5 Service Request / rejected / MS identity cannot be derived by the network

12.9.5.1 Definition

12.9.5.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "MS identity cannot be derived by the network", the UE shall:

1) set the GPRS update states to GU2 NOT UPDATED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
3) initiate the PS attach procedure automatically.

Reference

TS 24.008 clauses 4.7.13.4

12.9.5.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "MS identity cannot be derived by the network".

12.9.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #9 (MS identity cannot be derived by the network).

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 23.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "MS identity cannot be derived by the network"
9a	SS			The SS releases the RRC connection
10	UE			The UE automatically initiates the PS attach procedure.
10a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts ciphering and integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature
13	->		ATTACH COMPLETE	
13a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
14	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
15	->		SERVICE REQUEST	Service type = "signalling"
16	<-		SERVICE REJECT	Reject cause = “GPRS services not allowed”
17			VOID	
18			VOID	.
19	SS			The SS releases RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
21			Void	

22		Void	
23	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 22.

Specific message contents

None.

12.9.5.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "MS identity cannot be derived by the network" UE shall:

- initiate PS attach procedure automatically.

12.9.6 Service Request / rejected / PLMN not allowed

12.9.6.1 Definition

12.9.6.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PLMN not allowed", the UE shall:

1) delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.
2) set the GPRS update status to GU3 ROAMING NOT ALLOWED.
3) store the PLMN identity in the appropriate forbidden list.

Reference

TS 24.008 clauses 4.7.13.4

12.9.6.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PLMN not allowed".

12.9.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN).
All two cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #11 (PLMN not allowed).

c) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

d) The SS checks that the UE does not answer a Page from the SS until the power of the UE is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 24.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PLMN not allowed"
9a	SS			The SS releases the RRC connection
10	UE			The UE stores the PLMN identity in the "forbidden PLMN list".
11	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
12	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30second)
13	<-		PAGING TYPE1	Paging order is for PS service
14	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages shall be sent and shall be received on cell B.
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
16	UE			Cell B is preferred by the UE.
16a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
17a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI

18a	<-	AUTHENTICATION CIPHERING REQUEST	AND	
18b	->	AUTHENTICATION CIPHERING RESPONSE	AND	
18c	SS			The SS starts ciphering and integrity protection.
19	<-	ATTACH ACCEPT		Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'GPRS only attached'
20	->	ATTACH COMPLETE		
21	UE			The UE is switched off or power is removed (see ICS).
22	->	DETACH REQUEST		Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
24	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 23.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.9.6.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the SERVICE REJECT message with cause "PLMN not allowed", UE shall:

- not perform a PS attach procedure in the same PLMN.

At step13, when the UE receives the paging message for PS domain UE shall:

- not respond to the paging message for PS domain.

At step18, UE shall:

- perform PS attach procedure.

12.9.7a Service Request / rejected / No PDP context activated

12.9.7a.1 Definition

12.9.7a.2 Conformance requirement

If the network rejects a service request procedure with the cause "No PDP context activated":

- The UE shall deactivate locally all active PDP contexts and the UE shall enter the state GMM-REGISTERED.NORMAL-SERVICE. The UE may also activate PDP context(s) to replace any previously active PDP contexts.

NOTE: In some cases, user interaction may be required and then the UE cannot activate the PDP context(s) automatically.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No PDP context activated".

12.9.7a.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Method of context activation

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #40 (No PDP context activated).

c) After the UE receives the SERVICE REJECT message, the UE shall deactivate locally all active PDP contexts.

d) If the UE not automatically activates the PDP context (to replace the previously active PDP context) then a PS call is initiated by MMI or by AT command. The UE shall send a SERVICE REQUEST with Service type = "signalling".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1				The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 26.
2				The SS is set in network operation mode II and activates cell A.
3				The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	
6	->		ATTACH COMPLETE	
6a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		AUTHENTICATION AND CIPHERING REQUEST	
10	->		AUTHENTICATION AND CIPHERING RESPONSE	
11	SS			The SS initiates a security mode control procedure.
12	UE			After a PS call is established, the UE suspends transmission of the user data.
13	SS			The SS initiates a Radio Bearer release procedure.
14	UE			The UE resumes the transmission of the user data.
15	->		SERVICE REQUEST	Service type = "data"
16	<-		SERVICE REJECT	Reject cause = "No PDP context activated"
17	UE			The UE shall deactivate locally all active PDP contexts.
17a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates a PS call, automatically, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		AUTHENTICATION AND CIPHERING REQUEST	
21	->		AUTHENTICATION AND CIPHERING RESPONSE	
21	SS			SS initiates a security procedure by sending SECURITY MODE COMMAND message.
22	UE			The UE is switched off or power is removed (see ICS).
23	UE			The UE initiates Detach request, by MMI or by AT command.
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
25	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

26	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25.

Specific message contents

None.

12.9.7a.5 Test requirements

At step4, when the UE is powered on or switched on, the UE shall initiate the PS attach procedure.

At step15, the UE shall initiates a Service request procedure by sending a SERVICE REQUEST message with Service type = "data".

At step19, the UE shall initiates a Service request procedure by sending a SERVICE REQUEST message with Service type = "signalling".

12.9.7b Service Request / rejected / No Suitable Cells In Location Area

12.9.7b.1 Definition

12.9.7b.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "No Suitable Cells In Location Area", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

2) store the LAI in the list of 'forbidden location areas for roaming'.

If no RRC connection exists, the UE shall perform the following additional actions immediately. If the UE is operating in operation mode A and an RRC connection exists, the UE shall perform these actions when the RRC connection is subsequently released:

1) if the UE is IMSI attached, the UE shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

2) search for a suitable cell in a different location area on the same PLMN.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No Suitable Cells In Location Area".

12.9.7b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a Service request with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform routing area updating procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 15.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
2a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
2b		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = "GPRS attach" Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = 'signalling'
9	<-		SERVICE REJECT	Reject cause = 'No Suitable Cells In Location Area'
9a		SS		The SS releases the RRC connection The following message are sent and shall be received on cell B.
9b	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
9c		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
10a	<-		AUTHENTICATION AND CIPHERING REQUEST	
10b	->		AUTHENTICATION AND CIPHERING RESPONSE	
10c		SS		The SS starts ciphering and integrity protection.
11	<-		ROUTING AREA UPDATE ACCEPT	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Update result = 'RA updated'
12	->		ROUTING AREA UPDATE COMPLETE	

13 13a	UE	IMSI DETACH INDICATION	The UE is switched off or power is removed (see ICS). Message not sent if power is removed This is applicable only for UE in UE operation mode A.
14	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
14a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
15	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 14.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.7b.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step10, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

12.9.7c Service Request / rejected / Roaming not allowed in this location area

12.9.7c.1 Definition

12.9.7c.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Roaming not allowed in this location area", the UE shall:

1) set the PS update status to GU3 ROAMING NOT ALLOWED
2) store the LAI in the list of "forbidden location areas for roaming".
3) perform a PLMN selection.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Roaming not allowed in this location area".

12.9.7c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a Service request with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE shall not perform PS attach procedure when the UE enters a different location area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "roaming not allowed in this location area"
9a		SS		The SS releases the RRC connection.
10	UE			The UE performs PLMN selection.
11		SS		Set the cell type of cell A to the " Non-Suitable cell". Set the cell type of cell B to the " Serving cell". (see note)
12		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
13		SS		Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the " Serving cell". (see note) The following messages are sent and shall be received on cell C.
13a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
14a	<-		AUTHENTICATION AND CIPHERING REQUEST	
14b	->		AUTHENTICATION AND CIPHERING RESPONSE	
14c		SS		The SS starts integrity protection.

15	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-2
16	->	ROUTING AREA UPDATE COMPLETE	
17	UE		The UE is switched off or power is removed (see ICS).
18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS Detach'
18a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE enters a same location area, UE shall:

- not initiate the combined PS attach procedure.

At step14, when the UE enters a different location area, UE shall:

- initiate the routing area updating procedure with information elements specified in the above Expected Sequence.

12.9.8 Service Request / Abnormal cases / Access barred due to access class control

12.9.8.1 Definition

12.9.8.2 Conformance requirement

If the UE access class X is barred, the UE shall:

1) not start Service Request procedure.
2) stay in the current serving cell.
3) applie normal cell reselection process.

If the UE access class X is granted or serving cell is changed, the UE may:

1) start Service Request procedure.

Reference

TS 24.008 clauses 4.7.13.5.

12.9.8.3 Test purpose

To test the behavior of the UE in case of access class control (access is granted).

12.9.8.4 Method of test

Initial condition

A random access class X (0-15) is selected. The USIM is programmed with this access class X.

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS initiates access class X barred. A service request procedure is not performed.

The SS initiates that access class X is not barred. A service request procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 15.
1a	UE			The UE is powered up or switched on and attempt to initiate an ATTACH. (see ICS)
2			Void	
3			Void	
4			Void	
4a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
5	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c	SS			The SS starts ciphering and integrity protection.

6	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
7	->	ATTACH COMPLETE	
7a	SS		UE is moved to PMM idle. (The SS releases the RRC connection)
7b	SS		The access class x is barred in cell A
8	UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8a	UE		No SERVICE REQUEST sent to SS, as access class x is barred. SS waits 30 seconds
8b	SS		The access class x is not barred any more
8c	UE		In manual attach mode UE may send a Detach Request (Note 1). If the SS receives a Detach Request the test execution continues from step 14.
8d	UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
9	->	SERVICE REQUEST	Service Type = "signalling".
10	<-	SERVICE REJECT	GMM cause = 'GPRS services not allowed'
11		VOID	
11a	SS		The SS releases the RRC connection.
12	UE		The UE is switched off or power is removed (see ICS).
13	->	~~DETACH REQUEST~~Void	~~Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'~~
14	~~SS~~	Void	~~The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.~~
15	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 1a to step ~~14~~12.
Note 1: Support of automatic PS attach procedure at switch on - no			

Specific message contents

None.

12.9.8.5 Test requirements

At step 8a, when the UE access class x is barred, UE shall:

- not perform Service Request procedure.

At step9, UE shall:

- perform Service Request procedure.

12.9.9 Service Request / Abnormal cases / Routing area update procedure is triggered

12.9.9.1 Definition

12.9.9.2 Conformance requirement

If a cell change into a new routing area occurs and the necessity of routing area update procedure is determined before the security mode control procedure is completed, the UE shall:

- abort Service request procedure.
- start routing area update procedure immediately.

Reference

TS 24.008 clause 4.7.13.5

12.9.9.3 Test purpose

To test the behavior of the UE in case of collision between Routing area update procedure and Service request procedure.

12.9.9.4 Method of test

Initial condition

System Simulator:

One cell with MCC1/MNC1/LAC1/RAC1 (RAI-1)
The cell is operating in network operation mode II .

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling in cell A.

b) The SS conveys change of routing area code to the UE..

c) The UE aborts Service request procedure and performs Routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 22.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
5a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
6	SS			UE is moved to PMM Idle. The SS releases the RRC connection.
6a	UE			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	<-		UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code. Note: SS transmits the updated system information with the new RAI information in SIB1
8a	->		UTRAN MOBILITY INFORMATION CONFIRM	
9	UE			The UE aborts Service request procedure.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13			Void	
14			Void	
15			Void	
16			Void	
17			Void	
18			Void	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'

21	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message has been received within 1 second then the SS shall consider the UE as switched off.
22	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 21.
NOTE: The definitions for "Suitable neighbour cell", “Non-suitable cell” and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

UTRAN MOBILITY INFORMATION (step 8)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	Infinity
- ATT	0
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	1 (Network Mode of Operation II)
- CN domain specific DRX cycle length coefficient	7

12.9.9.5 Test requirements

At step 4, the UE shall send an ATTACH REQUEST message

At step 7, the UE shall send a SERVICE REQUEST message with Service type = "signalling".

At step 8, as the UE has received a new RAI in the UTRAN MOBILITY INFORMATION message before the SERVICE ACCEPT message or the SERVICE REJECT message is received, the UE shall abort service request procedure.

At step 10, the UE shall send a ROUTING AREA UPDATE REQUEST message.

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12.9.10 Service Request / Abnormal cases / Power off

12.9.10.1 Definition

12.9.10.2 Conformance requirement

When the UE in GMM-SERVICE-REQUEST-INITIATED state is switched off, UE shall:

- perform PS detach procedure.

Reference

TS 24.008 clauses 4.7.13.5

12.9.10.3 Test purpose

To test the behavior of the UE in case of collision between Service request procedure and "powered off".

12.9.10.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

The UE is switched off after initiating a Service request procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 11.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	UE			The UE is powered off and initiates a PS detach (with power off) by MMI or by AT command.
9	->		DETACH REQUEST	Detach type = 'power switched off, GPRSdetach'
10	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
11	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 10.

Specific message contents

None.

12.9.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform the service request procedure

At step9, when the UE is switched off during the Service Request procedure, UE shall;

- abort the Service request procedure.
- perform the PS detach procedure.

12.9.11 Service Request / Abnormal cases / Service request procedure collision

12.9.11.1 Definition

12.9.11.2 Conformance requirement

Abnormal cases in the MS

The following abnormal cases can be identified:

- Procedure collision

  If the MS receives a DETACH REQUEST message from the network in state GMM-SERVICE-REQUEST-INITIATED, the GPRS detach procedure shall be progressed and the Service request procedure shall be aborted. If the cause IE, in the DETACH REQUEST message, indicated a "reattach request", the GPRS attach procedure shall be performed.

Reference

TS 24.008 clauses 4.7.13.5

12.9.11.3 Test purpose

To test the behaviour of the UE in case of collision between Service request procedure and PS detach procedure.

12.9.11.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) The SS does not respond to the SERVICE REQUEST for data. Instead it sends a DETACH REQUEST message to the UE, with the Detach type IE set to value "re-attach required".

c) After the UE receives the DETACH REQUEST message, the repeats the attach procedure.

d) The UE is switched off or power is removed. If the UE is switched off it sends a DETACH REQUEST.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 17.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7a	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7b	->		SERVICE REQUEST	Service type ="signalling"
7c	SS			The SS starts ciphering and integrity protection.
7d	SS			The SS initiates a Radio Bearer release procedure.
7e	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "data"
9	SS			The SS does not respond to SERVICE REQUEST message.
10	<-		DETACH REQUEST	Detach type = "re-attach required"
10a	->		DETACH ACCEPT	
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts ciphering and integrity protection.
12	<-		ATTACH ACCEPT	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Attach result = 'GPRS only attached'
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'

16	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
17	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 16.

Specific message contents

None.

12.9.11.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives a DETACH REQUEST message from the network before the Service request procedure completes, UE shall;

- repeat the attach procedure.
- retry the Service request procedure

At step 19 if the UE is switched off, UE shall:

- perform the PS detach procedure.

12.9.12 Service Request / RAB re-establishment / UE initiated / Single PDP context

12.9.12.1 Definition

12.9.12.2 Conformance requirement

The following procedures shall be performed in the MS when radio coverage is lost:

- For a PDP context using background or interactive traffic class, the PDP context is preserved even if RRC re-establishment procedures have failed.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink) when the RRC re-establishment procedure has failed. After coverage is regained and if the MS did not deactivate the PDP Context locally the MS should start MS-initiated PDP Context Modification procedure or the PDP Context Deactivation procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.12.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with one preserved PDP context with traffic class "Background class" after normal RRC connection release as well as when radio coverage is lost.

To verify that the radio access bearer can be re-established for the preserved PDP context, initiated by the UE.

12.9.12.4 Method of test

Initial condition

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Test procedure

a) A PDP context with traffic class "Background class" is activated including the radio access bearer.

b) The SS releases the RRC connection, but keeps the PDP context.

c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

d) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

e) The SS configured the cell as a non-suitable "Off" cell for 4 minutes, making the UE to release the RAB and enter idle mode due to that radio coverage is lost.

f) The SS configures the cell as a serving cell.

g) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

h) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3	SS			The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5	SS			The SS releases the RRC connection
6	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
7	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
8	→		SERVICE REQUEST	Service type = "data"
9	SS			The SS starts ciphering and integrity protection.
10	SS			The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.
11	SS			The SS configures the cell as a non-suitable "Off" cell and waits for 4 minutes, making the UE to release the RAB and enter idle mode.
12	SS			The SS configures the cell as a serving cell.
13	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
14	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
15	→		SERVICE REQUEST	Service type = "data"
16	SS			The SS starts ciphering and integrity protection.
17	SS			The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

Specific message contents

None.

12.9.12.5 Test requirements

After steps 7 and 14, UE shall:

- transmit a SERVICE REQUEST message with service type "data"

12.9.13 Service Request / RAB re-establishment / UE initiated / multiple PDP contexts

12.9.13.1 Definition

12.9.13.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.

- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.13.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with two PDP contexts with different traffic classes are activated, when one is of traffic class "background class" and the other is of traffic class "interactive class", after normal RRC connection release.

To verify that the radio access bearers can be re-established with a single radio bearer establishment procedure for the preserved PDP contexts, when initiated by the UE.

12.9.13.4 Method of test

Initial condition

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Secondary PDP context activation procedure Yes/no

Test procedure

a) Two PDP contexts with different Traffic Classes are activated including the radio access bearers.

b) The SS releases the RRC connection, but keeps the two PDP contexts.

c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

d) The SS responds with a SERVICE ACCEPT message and establishes the RABs for the two active PDP contexts using a single Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5	UE			Initiate a secondary PDP context activation
6	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request a Secondary PDP context activation with traffic class "Interactive class"
7		SS		The SS establishes the radio access bearer.
8	←		ACTIVATE SECONDARY PDP CONTEXT ACCEPT	Accept the Secondary PDP context activation
9		SS		The SS releases the RRC connection.
10	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
11		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Interactive Call", which is the most demanding traffic class among the active PDP contexts.
12	→		SERVICE REQUEST	Service type = "data"
13		SS		The SS starts ciphering and integrity protection.
14		SS		The SS establishes the radio access bearers simultaneously for the two active PDP contexts, using the same QoS that was used at activation.

Specific message contents

None.

12.9.13.5 Test requirements

After step 11, UE shall:

- transmit a SERVICE REQUEST message with service type "data".

12.9.14 Service Request / RAB re-establishment / Network initiated / single PDP context

12.9.14.1 Definition

12.9.14.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.

- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

When RABs for an MS that has no RRC connection needs to be re-established, the CN must first page the MS.

The criteria to invoke the Service request procedure are when;

c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.14.3 Test purpose

To verify that the radio access bearers can be re-established for the preserved PDP context with traffic class "Background class", when initiated from the network, after normal RRC connection release.

12.9.14.4 Method of test

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Test procedure

a) A PDP context with traffic class "Background class" is activated including the radio access bearer.

b) The SS releases the RRC connection, but keeps the PDP context.

c) The SS initiates paging of the UE.

d) As response to the paging, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

e) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		SS		The SS releases the RRC connection.
6		SS		The SS waits for 5 s to ensure the UE is in service.
7	←		PAGING TYPE 1	The SS initiates paging of the UE using the paging cause "Terminating Background Call"'
8		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to the same value as the paging cause.
9	→		SERVICE REQUEST	Service type = "Paging response"
10		SS		The SS starts ciphering and integrity protection.
11		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

Specific message contents

None.

12.9.14.5 Test requirements

After step 8, UE shall:

- transmit a SERVICE REQUEST with service type "Paging response"

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Bangalore, India, 31st Jan – 4th Feb 2005

Tdoc ⌘T1-050410

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1104** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 Inter-system handover test case 8.3.7.12
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	1) As per **25.331** and **34.123-3 section 8.2.8**: "CELL UPDATE CONFIRM or URA UPDATE CONFIRM shall be sent on DCCH at the test for the ciphering reason except the periodic update without carrying the UE identity information". However as per test procedure for this test case Cell Update Confirm needs to be transmitted on CCCH. 2) As per the expected sequence at Step 5 after receiving the Handover Access Burst on GSM Cell, UTRA physical channel allocated to Mobile should be removed. However in this case UE may find a sync again in 3G cell before SS can remove the Physical Channel at UTRA and this may result in UE trying to send the Handover From Utran Failure message before Cell Update and may result in test case failure.
Summary of change:	⌘	1) Specified Cell Update Confirm message shall be send on DCCH instead of CCCH. 2) Remove UTRAN physical channel (DPCH) before receiving the Handover Access burst on the GSM cell.
Consequences if not approved:	⌘	Test case may fail a conformant UE.

Clauses affected:	⌘	8.3.7.12.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

8.3.7.12 Inter system handover from UTRAN/To GSM/Speech/Failure (Physical channel Failure and Reversion Failure)

8.3.7.12.1 Definition

8.3.7.12.2 Conformance requirement:

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

1> if the UE does not succeed to establish the UTRA physical channel(s):

2> perform a cell update procedure according to subclause 8.3.1 in TS 25.331with cause "Radio link failure";

2> when the cell update procedure has completed successfully:

3> proceed as below.

1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.5

8.3.7.12.3 Test purpose

The UE shall perform a cell update when the UE fails to revert to the old configuration after the detection of physical channel failure in the target RAT cell as given in the HANDOVER FROM UTRAN COMMAND message. After the UE completes the cell update procedure, the UE shall transmit a HANDOVER FROM UTRAN FAILURE message on the DCCH using AM RLC, including IE "failure cause" set to "physical channel failure".

8.3.7.12.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS and brings the UE into call active state (CC state U10) with AMR on the UTRAN cell. The SS configures a target dedicated channel on the GSM cell.The SS sends a HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH using the UTRAN configuration. The UE receives the command and configures itself accordingly but cannot complete the handover and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS released the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink ~~CCCH~~ DCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the new UTRA configuration, on the DCCH using AM RLC, setting the value of IE "failure cause" to " physical channel failure".

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	SS			The SS configures a dedicated GSM FR channel on the GSM cell.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send using the UTRA configuration and the message indicates: the target channel for GSM FR.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER COMMAND message that is contained within the HANDOVER FROM UTRAN COMMAND -GSM message
4a	SS			SS removes the UTRAN physical channel (DPCH) allocated to the mobile to ensure UE will not be able to revert back to the old UTRAN configuration when handover failed
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell. Upon receiving this burst, SS removes ~~both~~ the target GSM Traffic Channel ~~and the UTRA physical channel (DPCH) allocated to the mobile before handover command transmission~~. As a result not only the handover will fail, but also the reversion to the old UTRA configuration.
6	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
8				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
10	→		HANDOVER FROM UTRAN FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific message contents

Same as the message contents of clause 8.3.7.1 for Execution 3.

CELL UPDATE (Step 6)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' "radio link failure"

CELL UPDATE CONFIRM (Step 7) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
-UplinkDPCH Info	Same as specified in “Contents of RADIO BEARER SETUP message: AM or UM” for condition A2 (Speech CS) in TS 34.108 clause 9.1
- DPCCH power offset	-80dB (i.e. ASN.1 IE value of –40)
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present(1)
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- Number of FBI bit	Reference to TS34.108 clause 6.10 Parameter Set
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink information common for all radio links	Same as specified in “Contents of RADIO BEARER SETUP message: AM or UM” for condition A2 (Speech CS) in TS 34.108 clause 9.1
CHOICE Mode	FDD
- Downlink DPCH info common for all RL	
- Timing indicator	Initialise
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset PPilot-DPDCH	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	100
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0 chips
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

CELL UPDATE CONFIRM (Step 7) (3.84 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- CHOICE SyncCase	Not Present
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

CELL UPDATE CONFIRM (Step 7) (1.28 Mcps TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS34.108, clause 9, with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	30dBm
CHOICE Mode	TDD
Downlink information for each radio links	
- Primary CCPCH info	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- TSTD indicator	FALSE
- Cell Parameters ID	Not Present
- Block STTD indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	TDD
- DL CCTrCh List	
- TFCS ID	1
- Time info	
- Activation time	Not Present (default)
- Duration	Not Present (default)
- Common timeslot info	Not Present (default)
- Downlink DPCH timeslots and codes	Not Present (default)
- UL CCTrCH TPC List	Not Present (default)

HANDOVER FROM UTRAN COMMAND

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band - CHOICE GSM message - Message	 GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.12.5 Test requirement

After step 5 the SS shall receive an CELL UPDATE message.

After step 8 the SS shall receive an PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

After step 9 the SS shall receive an INTER-SYSTEM HANDOVER FAILURE message via the new UTRA configuration.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb 2005

Tdoc ⌘T1-050411

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1105** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 RRC test case 8.4.1.5
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	As per the specific message content at step 9 of the expected sequence "MIB value tag" value for Master information block should be 2. However in the TTCN implementation "MIB value tag" used is 3. As the requirement of the test case is to have different MIB value tag the previous one, thus no need to mention the specific value in the prose.
Summary of change:	⌘	In the specific message content at step 9 and step 10 of the expected sequence "MIB value tag" has been changed to following statement "A value that is different from the previous MIB value tag"
Consequences if not approved:	⌘	Conflict between 34.123-1 and TTCN

Clauses affected:	⌘	8.4.1.5.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects R99, Rel-4 and Rel-5.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION>

8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL_DCH to CELL_FACH state (FDD)

8.4.1.5.1 Definition

8.4.1.5.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH state, the UE shall:

1> stop intra-frequency type measurement reporting;

1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or

1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

1> if the transition is not due to a reconfiguration message:

2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT_IDENTITY.

1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331).

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH:

2> resume the measurement reporting.

1> if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);

2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331):

3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

Reference

3GPP TS 25.331, clause 8.4.1.6.1, 8.4.1.7.1

8.4.1.5.3 Test Purpose

1. To confirm that the UE stops performing intra-frequency measurement reporting specified in a MEASUREMENT CONTROL message, when it moves from CELL_DCH state to CELL_FACH state.

2. To confirm that the UE reads the System Information Block type 11 or 12 messages when it enters CELL_FACH state from CELL_DCH state, and starts to monitor the cells listed in the IE "intra-frequency cell info list".

3 To confirm that the UE performs measurements on uplink RACH transmissions and appends the measured results in RACH messages, when it receives IE "intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" in the System Information Block type 11 or 12 messages.

4. To confirm that the UE applies the reporting criteria in IE "intra-frequency reporting criteria" in System Information Block Type 11 or 12 messages following a state transition from CELL_FACH to CELL_DCH, if no intra-frequency measurements applicable to CELL_DCH are stored.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 and cell 2 are active, while cell 3 is switched off..

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For system information block 11 of Cell 1 (gives IE's which are different from defaults given in 34.108 subclause 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

Test Procedure

Table 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-72	-85	-122	-70

The UE is initially in CELL_DCH state. The System Information Block type 11 message is modified compared to the default message contents, in order to prevent the reporting of "Cell synchronisation information". No measurement to be applied by the UE in CELL_DCH state is specified in any of the System Information Block type 11 or 12 messages.

SS sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement for the measurement of cell 2's CPICH RSCP. At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds. The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.
SS transmits PHYSICAL CHANNEL RECONFIGURATION message to move the UE to CELL_FACH. After receiving this message, the UE shall reconfigure itself and reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. SS starts T305 timer and SS monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. SS transmits System Information Block type 12 messages in cell 1, which include cell 3 into the IE "intra-frequency cell info list" and modifies SIB11 to indicate that SIB12 is now being broadcast. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in the System Information Type 12 messages. Event type 1a reporting criterion is specified for intra-frequency measurements. SS transmit SYSTEM INFORMATION CHANGE INDICATION message to UE. SS waits until T305 has expired. The UE shall respond with a CELL UPDATE message, which comprises IE "Measured results on RACH" to report the readings of CPICH RSCP for cell 1 and cell 3. SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change the physical resources nor allocate any new RNTI identities. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, and configures dedicated physical channel for both uplink and downlink directions. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages.

SS shall receive the MEASUREMENT REPORT messages at 500 milliseconds interval.

SS verifies that it includes CPICH RSCP values of the cells 1and 3 in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results".

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in PS-DCCH+DTCH_DCH (state 6-10) in cell 1.
2			Void	
3			Void	
4			Void	
5	←		MEASUREMENT CONTROL	SS requests for measurement of cell 2´s CPICH RSCP value and reporting of CPICH RSCP values of active cells and monitored set cells.
6	→		MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval.
7	←		PHYSICAL CHANNEL RECONFIGURATION	SS moves the UE to CELL_FACH state.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state. SS starts T305 timer.
9	←		Master Information Block System Information Block type 11, 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. SIB 11 is modified to indicate that SIB12 is now broadcast and to add cell 2 as a neighbour cell. SIB 12 indicates that cell 3 is included in the IE "intra-frequency cell info list". SS waits for 1 minute and verifies that no MEASUREMENT REPORT messages are detected on the uplink.
10	←		SYSTEM INFORMATION CHANGE INDICATION	SS waits until T305 has expired.
11	→		CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 present in this message.
12	←		CELL UPDATE CONFIRM	No changes in physical resource allocation and RNTI identities.
13	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15	→		MEASUREMENT REPORT	Repeated at 500 milliseconds interval

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 5)

Information Element	Value/remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured result list	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)"

MASTER INFORMATION BLOCK (Step 9)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/Remarks
MIB Value Tag	~~2~~ A value that is different from the previous MIB value tag

System Information Block type 11 (Step 9)

Information Element	Value/remark
SIB12 indicator	TRUE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
-Intra-frequency measurement quantity	Not Present
-Intra-frequency reporting quantity for RACH reporting	Not Present
-Maximum number of reported cells on RACH	Not Present
-Reporting information for state CELL_DCH	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

System Information Block type 12 (Step 9)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	6
- Intra-frequency cell cells	
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1.4 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- $Qoffset_{s,n}$	0dB
- Maximum allowed UL TX power	0dBm
- HCS neighbouring cell information	Not Present
- CHOICE Mode	FDD
- Qqualmin, Qrxlevmin	-20dB, -115dBm
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity for RACH reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell + best neighbour
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting range constant	14.5dB
- Cells forbidden to affect reporting	Not present

- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	7
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting Interval	500 milliseconds
- Reporting cell status	
- CHOICE *reported cell*	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not present
- Inter-RAT measurement system information	Not present
- Traffic volume measurement system information	Not present

SYSTEM INFORMATION CHANGE INDICATION (Step 10)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	~~2~~ A value that is different from the previous MIB value tag

CELL UPDATE (Step 11)

Information Element	Value/remark
U-RNTI	Check to see if set to the same value assigned during the execution of procedure P3 or P5.
START list	Checked to see if this IE is present
AM_RLC error indication(RB2, RB3 or RB4)	FALSE
AM_RLC error indication(RB>4)	FALSE
Cell update cause	Check to see if it is set to "Periodical cell update"
Failure case	Check to see if it is absent
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
- Measurement results for monitored cells	
- SFN-SFN observed time difference	Check to see if it is absent
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

MEASUREMENT REPORT (Step 15)

Information Element	Value/remark
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain IE "measured result" to report cell 2's CPICH RSCP value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall perform a cell update procedure and transmit a CELL UPDATE message. In this message, measured values CPICH RSCP for cell 1 and cell 3 shall be included in the IE "measured results on RACH".

After step 14, the UE shall apply the intra-frequency measurement reporting criteria" received in System Information Block type 12 messages of step 9. It shall send MEASUREMENT REPORT messages at 500 milliseconds interval. In these messages, triggering of event '1a' shall be reported in IE "Event results" with IE "Primary CPICH info" containing the primary scrambling code for cell 3.

The message shall contain IE "measured result" to report CPICH RSCP values of cell 1and 3.

<END OF MODIFIED SECTION>

3GPP TSG T1 Meeting #26
Bangarole, India, 31th January – 4th Feburary 2005

***Tdoc* T1-050414**
Agenda Item 8.8.3

CR-Form-v7.1

CHANGE REQUEST

⌘	**34.123-1**	**CR**	1108	⌘ **rev**	-	⌘ Current version:	**5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS34.123-1; New RRC test cases for Radio Bearer Setup Procedure
Source:	⌘	NTT DoCoMo
Work item code:	⌘	TEI
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	In the current specs, there is no test case for unsynchronised RL Reconfiguration procedure.
Summary of change:	⌘	The following new test cases are add; 8.2.1.X Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Unsynchronised RL Reconfiguration) 8.2.1.Y Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Unsynchronised RL Reconfiguration with frequency modification)
Consequences if not approved:	⌘	Lack of unsynchronised RL Reconfiguration test cases.

Clauses affected:	⌘	8.2.1.X (new), 8.2.1.Y (new)

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	TS34.123-2
	X		Test specifications	
		X	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<<START OF MODIFICATION>>

8.2.1.X Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Unsynchronised RL Reconfiguration)

8.2.1.X.1 Definition

8.2.1.X.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1bis> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):

2>set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

…

(Note: From TS25.433 clause 8.3.5.1)

The Unsynchronised Radio Link Reconfiguration procedure is used to reconfigure Radio Link(s) related to one UE-UTRAN connection within a Node B.

The Unsynchronised Radio Link Reconfiguration procedure is used when there is no need to synchronise the time of the switching from the old to the new configuration in one Node B used for a UE-UTRAN connection with any other Node B also used for the UE–UTRAN connection.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4 ~~and TS25.433 clause 8.3.5.1.~~

8.2.1.X.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.X.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) or PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established.

The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Non speech from CELL_DCH to CELL_DCH in CS" or "Speech from CELL_DCH to CELL_DCH in CS" or "Packet to CELL_DCH from CELL_DCH in PS" in [9] TS 34.108 clause 9, except for the following;

Information Element	Value/remark
Activation time	Now

8.2.1.X.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

8.2.1.Y Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Unsynchronised RL Reconfiguration with frequency modification)

8.2.1.Y.1 Definition

8.2.1.Y.2 Conformance requirement

If the UE receives:

- a RADIO BEARER SETUP message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214 (FDD only);

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

1bis> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):

2>set the IE "Uplink Timing Advance" according to subclause 8.6.6.26.In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

...

(Note: From TS25.433 clause 8.3.5.1)

The Unsynchronised Radio Link Reconfiguration procedure is used to reconfigure Radio Link(s) related to one UE-UTRAN connection within a Node B.

The Unsynchronised Radio Link Reconfiguration procedure is used when there is no need to synchronise the time of the switching from the old to the new configuration in one Node B used for a UE-UTRAN connection with any other Node B also used for the UE–UTRAN connection.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4 ~~and TS25.433 clause 8.3.5.1.~~

8.2.1.Y.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.Y.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive.

UE: CS-DCCH_DCH (state 6-5) or PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.1.Y

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84MHz	-55	-55	OFF	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	OFF	-55

Table 8.2.1.Y illustrates the downlink power to be applied for the 2 cells at various time instants of the test execusion. Column marked “T0” denote the initial conditions.

The UE is in CELL_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. SS has configured its downlink transmission power setting according to columns “T0” in table 8.2.1.Y. Then SS switches its downlink transmission power setting to columns “T1”.

The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer in cell6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	SS receives this message from cell 6.
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type indicated by "Non speech from CELL_DCH to CELL_DCH in CS" or "Speech from CELL_DCH to CELL_DCH in CS" or "Packet to CELL_DCH from CELL_DCH in PS" in [9] TS 34.108 clause 9, except for the followings;

Information Element	Value/remark
Activation time	Now
Frequency info - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 350

8.2.1.Y.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

<<**END OF MODIFICATION**>>

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan - 04 Feb 2005

Tdoc ⌘T1-050415

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1109** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to WI-012 test case 8.1.6.3
Source:	⌘	R&S
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The PDP Context Activation Request message is not acknowledged by the SS before triggering the RRC Connection Release procedure. This could result in the UE being in an unstable state.
Summary of change:	⌘	1. Added Activate PDP Context Reject message with cause set to "Activation rejected, unspecified", before sending the RRC Connection Release message. 2. Deleted "See default message content" in step 7 as NAS message does not have default contents.
Consequences if not approved:	⌘	Could fail the test case as postanmble procedures will not be successfully executed

Clauses affected:	⌘	8.1.6.3.4

Other specs affected: ⌘

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

⌘

Other comments: ⌘ TTCN Changes are required.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.6.3 Measurement Report on INITIAL DIRECT TRANSFER message and UPLINK DIRECT TRANSFER message

8.1.6.3.1 Definition

8.1.6.3.2 Conformance requirement

In CELL_FACH state, the UE shall:

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

Reference

3GPP TS 25.331, clause 8.1.8.2, 8.1.10.2

8.1.6.3.3 Test Purpose

To confirm that the UE reports measured results on RACH messages, if it receives IE "Intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" from System Information Block Type 11 or 12 upon a transition from idle mode to CELL_FACH state.

8.1.6.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Specific Message Content

For system information block 11 for Cell 1 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11 (Step 1) (FDD)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	5
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	0
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency Measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range Constant	15 dB
- Cells forbidden to affect reporting range	Not Present
- W	0.0
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	0
- Replacement activation threshold	Not Present
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting Cell Status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency

- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	Not Present

System Information Block type 11 (Step 1) (TDD)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	5
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	0
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	TDD
- Primary CCPCH Info	Set to same as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency Measurement quantity	
- Filter Coefficient	0
- Measurement quantity	PCCPCH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	PCCPCH RSCP
- Maximum number of reported cells on RACH	Current cell
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- PCCPCH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not present
- Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each event	
- Intra-frequency event identity	1g
- Reporting Range Constant	15 dB
- Cells forbidden to affect reporting range	Not Present
- W	0.0
- Hysteresis	1.0 dB
- Time to trigger	60 ms
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting Cell Status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	Not Present

Test Procedure

The UE is initially in idle mode and camps on cell 1. SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. SS and UE shall execute out going call procedure. During this procedure UE transmits INITIAL DIRECT TRANSFER and UPLINK DIRECT TRANSFER messages with IE"Measured results on RACH" which is set to measured CPICH RSCP" (for FDD) or "Primary CCPCH info" (for TDD) in the current cell. After that SS releases a RRC connection.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in idle mode and camps onto cell 1.
2				SS prompts the test operator to make an outgoing call.
3	→		RRC CONNECTION REQUEST	
4	←		RRC CONNECTION SETUP	See default message content (Transition to CELL_FACH)
5	→		RRC CONNECTION SETUP COMPLETE	See default message content
6	→		INITIAL DIRECT TRANSFER (SERVICE REQUEST)	See specific message content
7	←		DOWNLINK DIRECT TRANSFER(AUTHENTICATION AND CIPHERING REQUEST)	~~See default message content~~
8	→		UPLINK DIRECT TRANSFER(AUTHENTICATION AND CIPHERING RESPONSE)	See specific message content
9	←		SECURITY MODE COMMAND	See default message content
10	→		SECURITY MODE COMPLETE	See default message content
11	→		UPLINK DIRECT TRANSFER(ACTIVATE PDP CONTEXT REQUEST)	See specific message content
11a	←		DOWNLINK DIRECT TRANSFER (ACTIVATE PDP CONTEXT REJECT)	Cause set to “Activation rejected, unspecified”
12	←		RRC CONNECTION RELEASE	See default message content
13	→		RRC CONNECTION RELEASE COMPLETE	See default message content

Specific Message Content

RRC CONNECTION REQUEST (Step 3) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to 'CPICH RSCP'
- CPICH RSCP	Checked to see if set to within an acceptable range.
- Measurement results for monitored cells	Checked to see if this IE is absent.

RRC CONNECTION REQUEST (Step 3) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to 'PCCPCH RSCP'
- PCCPCH RSCP	Checked to see if set to within an acceptable range.
- Measurement results for monitored cells	Checked to see if this IE is absent.

INITIAL DIRECT TRANSFER (SERVICE REQUEST) (Step 6) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	 Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

INITIAL DIRECT TRANSFER (SERVICE REQUEST) (Step 6) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - PCCPCH RSCP - Measurement results for monitored cells	 Check to see if set to 'PCCPCH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

UPLINK DIRECT TRANSFER(AUTHENTICATION AND CIPHERING RESPONSE) (Step 8)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	 Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

UPLINK DIRECT TRANSFER(AUTHENTICATION AND CIPHERING RESPONSE) (Step 8) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - PCCPCH RSCP - Measurement results for monitored cells	 Check to see if set to 'PCCPCH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

UPLINK DIRECT TRANSFER(ACTIVATE PDP CONTEXT REQUEST) (Step 11) (FDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - CPICH RSCP - Measurement results for monitored cells	 Check to see if set to 'CPICH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

UPLINK DIRECT TRANSFER(ACTIVATE PDP CONTEXT REQUEST) (Step 11) (TDD)

Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Measured results on RACH - Measurement result for current cell - CHOICE measurement quantity - PCCPCH RSCP - Measurement results for monitored cells	 Check to see if set to 'PCCPCH RSCP' Checked to see if set to within an acceptable range. Checked to see if this IE is absent.

8.1.6.3.5 Test Requirement

After step 2 the UE shall transmit a RRC CONNECTION REQUEST message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP (FDD mode) or PCCPCH RSCP (TDD mode).

After step 5 the UE shall transmit a INITIAL DIRECT TRANSFER (SERVICE REQUEST) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP.

After step 7 the UE shall transmit a UPLINK DIRECT TRANSFER(AUTHENTICATION AND CIPHERING RESPONSE) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP (FDD mode) or PCCPCH RSCP (TDD mode).

After step 10 the UE shall transmit a UPLINK DIRECT TRANSFER(ACTIVATE PDP CONTEXT REQUEST) message which includes IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP (FDD mode) or PCCPCH RSCP (TDD mode).

3GPP TSG-T Meeting #26
Bangalore, India, 31st January - 4th February 2005

Tdoc ⌘T1-050416

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.123-1** **CR** 1110 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1 Rel-5: Correction to P4 RRC test case 8.3.11.4
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	TEI
Date:	⌘	01/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change: ⌘

Subclause 8.3.11.4.4 of specifies under 'Specific message contents' the 'CELL UPDATE CONFIRM' message to contain IE 'Downlink information for each radio links', with 'DPCH frame offset' value = 0 chips. IE 'Downlink information common for all radio links' is specified to be omitted.

However, TS 25.331 states in subclause 8.6.6.14 (DPCH frame offset):

If "DPCH frame offset" is included in a message that instructs the UE to enter CELL_DCH state:
1> UTRAN should:
2> If only one Radio Link is included in the message:
3> set "Default DPCH Offset Value" and "DPCH frame offset" respecting the following relation:
(Default DPCH Offset Value) mod 38400 = DPCH frame offset

Therefore the IE 'Downlink information for each radio links' has to be included, with a value for 'Default DPCH Offset Value' which is compatible to the 'DPCH frame offset' value in IE 'Downlink information for each radio links'.

The 'DPCH frame offset' value of 0 chips as currently proposed in 8.3.11.4.4 is unrealistic. Therefore the Default DPCH Offset Value (as currently stored in SS) mod 38400 is proposed here. Since IE 'Frequency info' is contained in the 'CELL UPDATE CONFIRM' message, a 'physical layer synchronisation procedure' has to be performed (in UL and DL direction; see subclause 8.6.6.1 of 3GPP TS 25.331). Therefore the 'UL DPCH Info' (channel requirement) IE has also to be contained in the message.

Summary of change:	⌘	The specific message contents in 8.3.11.4.4 of 3GPP TS 34.123-1 for the Cell Update Confirm message (STEP 9) is modified to contain UL DPCH Info (channel requirement) and DL information common for all radio links.
Consequences if not approved:	⌘	With IEs "UL DPCH Info" and "Downlink information common for all radio links" missing, erroneous test case results will be achieved.

Clauses affected:	⌘	8.3.11.4.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
		X		Test specifications		34.123-3
			X	O&M Specifications		
Other comments:	⌘	Affects R99, Rel-4 and Rel-5.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION 8.3.11.4.4>

8.3.11.4.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2.

All cells belong to the same PLMN . UTRAN and GPRS cells belong to different location area.

UE: PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, one PS domain RAB is established.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480,

Test Procedure

The SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_DCH (state 6-10). The SS starts GPRS cell, then sends CELL CHANGE ORDER FROM UTRAN indicating the target cell description, GPRS cell, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the cell change and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS shall not use the old configuration. The UE transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the CELL CHANGE ORDER FAILURE message to the SS in UTRAN cell, on the DCCH using AM RLC, setting the value of IE " Inter-RAT change failure " to " physical channel failure".

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH+DTCH_DCH (State 6-10) in cell 1
2	SS			The SS configures cell 2 as a GSM cell with GPRS enabled
3	←		CELL CHANGE ORDER FROM UTRAN	Send on cell 1 (UTRAN cell) and the message indicates: the target cell description for GSM/GPRS.
3a	SS			SS removes the physical channel (DPCH), which was allocated to the mobile before Cell Change Order From UTRAN transmission
4	UE			The UE accepts the cell change command and switches to the GSM/GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on RACH of cell 2 (GPRS cell) to establish temporary block flow. It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT REJECT	SS rejects the channel request
7			VOID	
8	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
9	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
10				The SS configure the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
11	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
12	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The IE "Inter-RAT failure cause" shall be set to "physical channel failure"

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
Target cell description	
- CHOICE *Radio Access Technology*	
- GSM	
- BSIC	BSIC of Cell 2
- Band Indicator	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	Allocated BCCH ARFCN of Cell 2
- NC mode	Not present

CELL UPDATE (Step 8)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' "radio link failure"

CELL UPDATE CONFIRM (Step 9)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in TS 34.108, clause 9,with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- UARFCN uplink (Nu)	Reference to TS34.108 clause 5.1 Test frequencies
- UARFCN downlink (Nd)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	33dBm
CHOICE *channel requirement*	Uplink DPCH info
- Uplink DPCH power control info	
- DPCCH power offset	-80dB (i.e. ASN.1 IE value of –40)
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Scrambling code type	Long
- Scrambling code number	0
- Number of DPDCH	Not Present
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not present
- Puncturing Limit	pl0-96
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialise
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset $P_{Pilot-DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	flexible
- TFCI existence	TRUE
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Set to value: Default DPCH Offset Value (as currently stored in SS) mod 38400
Downlink information for each radio links	
CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	100
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value : Default DPCH Offset Value (as currently stored in SS) mod 38400
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	SF-1 (SF is reference to TS34.108 clause 6.10 Parameter Set)
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	-a
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

CELL CHANGE ORDER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink CELL CHANGE ORDER FROM UTRAN message
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Inter-RAT change failure	
-Inter-RAT change failure cause	physical channel failure

<END OF MODIFIED SECTION>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050417

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1111** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test cases 12.6.1.3.1 , 12.6.1.3.2 and 12.9.6
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

1) In test case12.6.1.3.1 Initial condition specifies

cell B in MCC1/MNC1/LAC1/RAC2 **(RAI-4).**
where as in section 12.6.1.3.1.4 Expected sequence at Step#21 specifies ROUTING AREA UPDATE ACCEPT message with Routing area identity = **RAI-2**.

2) In test case12.6.1.3.2 Initial condition specifies

cell B in MCC1/MNC1/LAC1/RAC2 **(RAI-4).**
where as in section 12.6.1.3.2.4 Expected sequence at Step#17 specifies ROUTING AREA UPDATE ACCEPT message with Routing area identity = **RAI-2**.

3) In test case 12.9.6 intial condition for SS specifies:

cell A in MCC1/MNC2/LAC1/RAC1 (**RAI-8**, Not HPLMN),

where as in section 12.9.6.4 initial condition for user quipment, expected sequence at Step#4 and step#6 specifies Routing area identity of **RAI-1**.

Summary of change: ⌘

1. In section 12.6.1.3.1.4 at Step#21, the reference of **RAI-2** changed to **RAI-4**

2. In section 12.6.1.3.2.4 at Step#17, the reference of **RAI-2** changed to **RAI-4**

3. In section 12.9.6.4 in Initial condition for user equipment, at Step#4 and Step#6, the the reference of **RAI-1** changed to **RAI-8**.

Consequences if not approved: ⌘ 34-123-1 will be as per the TTCN implementation.

Clauses affected:	⌘	12.6.1.3.1.4 ,12.6.1.3.2.4 and 12.9.6.4			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

12.6.1.3.1 GMM cause 'MAC failure'

12.6.1.3.1.1 Definition

12.6.1.3.1.2 Conformance requirement

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'MAC failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.1.3 Test purpose

To test the behaviors of the UE, when the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid.

12.6.1.3.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

The MAC (Message Authentication Code) code, which is included in AUTHENTICATION AND CIPHERING REQUEST, is invalid value.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'MAC failure' to the SS.

The SS initiates an identification procedure, upon receipt of a failure message with reject cause 'MAC failure'.

After the identification procedure is complete, the SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 25.
3	UE			
4				The following messages are sent and shall be received on cell A.
5	UE			The UE is powered up or switched on and initiates an attach (see ICS).
5a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
7	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Invalid Message Authentication Code (MAC).
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
9a	<-		IDENTITY REQUEST	Identity type = IMSI
9b	->		IDENTITY RESPONSE	Mobile identity = IMSI
10	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CSKN-1
11	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
12		SS		The SS checks the RES value and starts integrity protection.
13			Void	
14			Void	
15			Void	
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
18		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
18a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
20		SS		The SS checks the value of PS-CKSN and starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = ~~RAI-2~~ RAI-4
22	->		ROUTING AREA UPDATE COMPLETE	
23	UE			The UE is switched off or power is removed (see ICS).

24	->	DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
24a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
25	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 24.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.3.2 GMM cause 'Synch failure'

12.6.1.3.2.1 Definition

12.6.1.3.2.2 Conformance requirement

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'Synch failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.2.3 Test purpose

To test the behaviors of the UE, when the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range.

12.6.1.3.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'synch failure' to the SS.

SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)

Step	Direction		Message	Comments
	UE	SS		
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 21. The following messages are sent and shall be received on cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. SQN is out of range.
6			Void	
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause = 'Synch failure' AUTS parameter
8	SS			set new authentication vectors. (re-synchronisation)
9	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CKSN-1
10	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
11	SS			The SS checks the RES value and starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
13a	SS			The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
14	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
16	SS			The SS checks the value of PS-CKSN and starts integrity protection
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = ~~RAI-2~~ RAI-4
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
20a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 20.

Step	Direction		Message	Comments
	UE	SS		
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.6.1.3.2.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step7, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message(SQN is out of range.), UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS

At step9, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step15, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

<< END OF MODIFIED SECTION >>

……

<< START OF MODIFIED SECTION >>

12.9.6 Service Request / rejected / PLMN not allowed

12.9.6.1 Definition

12.9.6.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PLMN not allowed", the UE shall:

1) delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.
2) set the GPRS update status to GU3 ROAMING NOT ALLOWED.
3) store the PLMN identity in the appropriate forbidden list.

Reference

TS 24.008 clauses 4.7.13.4

12.9.6.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PLMN not allowed".

12.9.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN).
All two cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-~~1~~8.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #11 (PLMN not allowed).

c) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

d) The SS checks that the UE does not answer a Page from the SS until the power of the UE is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 24.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = ~~RAI-1~~ RAI-8
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = ~~RAI-1~~ RAI-8 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PLMN not allowed"
9a	SS			The SS releases the RRC connection
10	UE			The UE stores the PLMN identity in the "forbidden PLMN list".
11	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
12	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30second)
13	<-		PAGING TYPE1	Paging order is for PS service
14	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages shall be sent and shall be received on cell B.
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
16	UE			Cell B is preferred by the UE.
16a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
17a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI

18a	<-	AUTHENTICATION CIPHERING REQUEST	AND	
18b	->	AUTHENTICATION CIPHERING RESPONSE	AND	
18c	SS			The SS starts ciphering and integrity protection.
19	<-	ATTACH ACCEPT		Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'GPRS only attached'
20	->	ATTACH COMPLETE		
21	UE			The UE is switched off or power is removed (see ICS).
22	->	DETACH REQUEST		Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
24	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 23.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.9.6.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the SERVICE REJECT message with cause "PLMN not allowed", UE shall:

- not perform a PS attach procedure in the same PLMN.

At step13, when the UE receives the paging message for PS domain UE shall:

- not respond to the paging message for PS domain.

At step18, UE shall:

- perform PS attach procedure.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050421

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1112 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to HSDPA RRC test case 8.2.2.39 (revision of T1-050270)
Source:	⌘	Nokia, ETSI MCC160
Work item code:	⌘	TEI
Date:	⌘	20/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	• This test case uses 2 cells, but no power settings are provided by the prose. • Step 0 of the prose set up a PS RB mapped on HS-DSCH using only one RB Multiplexing Option (DCH/HS-DSCH). Then at step 1 HS-DSCH reception is stopped, which means the radio bearer is not mapped to any DL transport channel any more. In addition at step 3, a non-existing DL transport channel (DCH6) is deleted. • For the Radio Bearer mapped on top of HS-DSCH the default RB Identity is now 25 (see T1-050072). • The IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose.
Summary of change:	⌘	• Add the power settings table 8.2.2.39 & update the Expected Sequence accordingly. • At step 1, ~~add the configuration for a new DL transport channel DCH6 and~~ map the PS RB on DCH1/DCH6. At step 3, configure the PS RB on top of DCH/HS-DSCH again. • Change the RB Id from 23 into 25. • At steps 1 & 3 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment'.
Consequences if not approved:	⌘	The test case will fail a conformant UE.

Clauses affected:	⌘	8.2.2.39

Y | N

Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2.39 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, start and stop of HS-DSCH reception)

8.2.2.39.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.39.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if "DPCH frame offset" is included for one or more RLs in the active set:

2> use its value to determine the beginning of the DPCH frame in accordance with the following:

3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).

3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";

- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If IE "Timing indication" has the value "initialise", UE shall:

1> execute the Timing Re-initialised hard handover procedure by following the procedure indicated in the subclause relevant to the procedure chosen by the UTRAN.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.5.25, 8.6.3.1

8.2.2.39.3 Test purpose

To confirm that the UE starts and stops receiving the HS-DSCH in conjunction with a interfrequency hard handover without prior measurement on the target frequency according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.39.4 Method of test

Initial Condition

System Simulator: 2 cells–Cells 1 and 6 are active.

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

Table 8.2.2.39

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		f_1		f_2	
CPICH Ec	dBm/ 3.84 MHz	-60	-70	-70	-60

Table 8.2.2.39 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The SS has configured its downlink transmission power settings according to columns "T0" in table 8.2.2.39. SS initiates P25 to make the UE move to state 6-17 as specified in TS34.108 clause 7.4. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER RECONFIGURATION message instructing the UE to perform a timing re-initialised interfrequency hard handover to cell 6 and stop the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC in cell 6.

The SS switches its downlink transmission power settings to columns "T0" and transmits a RADIO BEARER RECONFIGURATION message instructing the UE to perform an interfrequency hard handover to cell 1 and start the

reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC in cell 1.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message (Step 0)
0a	SS			The SS switches its downlink transmission power settings to columns "T1" in table 8.2.2.39.
1	←		RADIO BEARER RECONFIGURATION	Hard handover, stop of HS-DSCH reception
2	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 6.
2a	SS			The SS switches its downlink transmission power settings to columns "T0" in table 8.2.2.39.
3	←		RADIO BEARER RECONFIGURATION	Hard handover, start of HS-DSCH reception
4	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message on a dedicated physical channel in cell 1.
	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

RADIO BEARER RECONFIGURATION (step 1)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following.

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	~~Not Present~~
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- Logical channel identity	Not Present
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
- CFN-targetSFN frame offset	0
- Downlink DPCH power control information	Not Present
- Downlink rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or flexible position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512

- MAC-hs reset indicator	TRUE
Downlink information per radio link list	1 radio link
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to the scrambling code for cell 6
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Serving HS-DSCH radio link indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value of DPCH Frame Offset modulo 38400
- Secondary CPICH info	Not present
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Any value between 0 and Spreading factor-1
- Scrambling code change	Not Present
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

RADIO BEARER RECONFIGURATION (step 3)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	~~Not Present~~ Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	DCH
- Transport channel identity	6
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 1
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
- CFN-targetSFN frame offset	0
- Downlink DPCH power control information	Not Present
- Downlink rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or flexible position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	1 radio link
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to the scrambling code for cell 1
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present

- PDSCH code mapping	Not present
- Serving HS-DSCH radio link indicator	TRUE
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value of DPCH Frame Offset modulo 38400
- Secondary CPICH info	Not present
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Any value between 0 and Spreading factor-1
- Scrambling code change	Not Present
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

8.2.2.39.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message in cell 6.

After step 3, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message in cell 1.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan- 4th Feb 2005

Tdoc ⌘ T1-050428

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1114** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Addition of inter-RAT handover test case (UE supporting DTM) to 34.123-1
Source:	⌘	Sasken Communication Technologies Limited, Ericsson
Work item code:	⌘	TEI
Date:	⌘	10/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Current version of the test specification does not have test case that cover: "To verify that in UTRAN cell when UE (supporting DTM) is in speech call active state and PS data call is established, UE performs handover to GSM RAT after receiving HANDOVER FROM UTRAN COMMAND"
Summary of change:	⌘	A new inter-RAT handover test case is added to the test specification
Consequences if not approved:	⌘	This feature of the UE will remain untested

Clauses affected:	⌘	8.3.7			
Other specs affected:	⌘	Y / N	Other core specifications	⌘	34.123-2
		N / X	Test specifications		
		X /	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.7.17 Inter system handover from UTRAN/To GSM/DTM Support/Simultaneous CS and PS domain services/Success

8.3.7.17.1 Definition

8.3.7.17.2 Conformance requirement

The purpose of the inter-RAT handover procedure is to, under the control of the network, transfer a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH state. This procedure may be used when no RABs are established or when the established RABs are only in the CS domain or when the established RABs are in both CS and PS domains

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

…

For a UE in CELL_DCH state using both CS and PS Domain services the Inter-RAT handover procedure is based on measurement reports from the UE but initiated from UTRAN.

The UE performs the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode first. When the UE has sent handover complete message to GSM / BSS the UE initiates a temporary block flow towards GPRS and sends a RA update request.

If the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode was successful the handover is considered as successful regardless if the UE was able to establish a temporary block flow or not towards GPRS.
In case of Inter-RAT handover failure the UE has the possibility to go back to UTRA RRC Connected Mode and re-establish the connection in the state it originated from

…

The establishment of a packet resource is supported by procedures on the main DCCH when the mobile station is in dedicated mode. The procedures are only applicable to a mobile station supporting DTM with GPRS or EGPRS. The procedures are optional for the network.

These procedures constitute a complement to the corresponding procedures for temporary block flow establishment using CCCH or PCCCH while in idle mode defined in 3GPP TS 04.18 and 3GPP TS 04.60, respectively

…

While in dedicated mode, upper layers in the mobile station or in the network may request the transport of GPRS information transparently over the radio interface. This procedure is only applicable when:

- the information from upper layers is signalling information; and
- the GTTP length of the message is below the maximum indicated by the network.

In any other case, the RR procedures related to packet resource establishment while in dedicated mode apply.

The information from upper layers shall be carried inside the GTTP Information message. The GTTP Information message contains:

- the TLLI of the MS; and

- the LLC PDU.

The GTTP messages are sent using "normal" priority at the data link layer.Reference(s)

TS 25.331 Clause 8.3.7, B.6.1, TS 04.18 Clause 3.4.26

8.3.7.17.3 Test purpose

To verify that in UTRAN cell when UE (supporting DTM) is in speech call active state and PS data call is established, UE performs handover to GSM RAT after receiving HANDOVER FROM UTRAN COMMAND.

8.3.7.17.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GPRS with BCCH. 51.010 clause 40.1.1 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9

DTM support is indicated in SI6 for cell 9. MAX LAPDm is set to 111.

UE: Registered Idle Mode on CS/PS (state 7) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Conversational /Speech UL: 12.2kbps DL: 12.2 kbps /CS RAB+ Interactive or Background UL: 64kbps DL: 64kbps /PS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
- UE supports UE operation mode A: PS and CS simultaneously
- UE supports DTM

Foreseen final state of the UE

UE is in CC state U10 and packet Idle mode on cell 9

Test Procedure

The SS brings the UE into call active state (CC state U10) with conversational/speech /uplink: 12.2 DL: 12.2 kbps/CS RAB + UL: 3.4 DL: 3.4 kbps SRBs. During call active state, SS configures PS RAB with Interactive or Background/UL: 64 kbps DL: 64 kbps configuration. The SS configures an appropriate traffic channel on the GSM cell. SS sends a HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The RAU procedure is perfomed.

To check that PDP context is active, SS sends MODIFY PDP CONTEXT REQUEST and assigns new QoS in GPRS cell. The UE may or may not accept the new QoS and replies to the SS accordingly.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	↔			The SS brings the UE into UTRAN U10 state in cell 1 with configuration: Conversational/Speech/uplink: 12.2 DL: 12.2 kbps/CS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
2	↔		SS executes Procedure P19 (clause 7.4.2.8.1.2) specified in TS 34.108	Session Setup is initiated from UE side. PS RAB configuration is Interactive/Background UL: 64 kbps DL: 64 kbps/PS RAB + UL: 3.4kbps DL: 3.4kbps SRBs
3	↔		SS	The SS configures a traffic channel on cell 9 for GSM FR
4	←		HANDOVER FROM UTRAN COMMAND	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM
5	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.
14	←		DTM INFORMATION	MAX_LAPDm set to 111.
15	→		GPRS INFORMATION	Contains the ROUTING AREA UPDATE REQUEST message.
16	←		GPRS INFORMATION	Contains the ROUTING AREA UPDATE ACCEPT message, reallocating the UEs P-TMSI to C2345678Hex.
17	→		GPRS INFORMATION	Contains the ROUTING AREA UPDATE COMPLETE message.
18	←		GPRS INFORMATION	Contains the MODIFY PDP CONTEXT REQUEST to request the modification of a PDP context, with a new QoS (peak throughput is changed to '0011')
A19	→		GPRS INFORMATION	Contains the MODIFY PDP CONTEXT ACCEPT to accept the PDP Context modification.
B19	→		GPRS INFORMATION	Contains the DEACTIVATE PDP CONTEXT REQUEST. Cause set to 'QoS not accepted'
B20	←		GPRS INFORMATION	Contains the DEACTIVATE PDP CONTEXT ACCEPT to accept the PDP context deactivation.
				Steps B21-B22 are optional
B21 (Optional)	→		GPRS INFORMATION	Contains the DETACH REQUEST. This is sent optionally by a non-auto attach UE. behaviour type B: The SS shall wait up to 'T3390' seconds for the DETACH REQUEST.
B22 (Optional)	←		GPRS INFORMATION	Contains the DETACH ACCEPT.

Note : The UE follows either branch A or B after step 18

Specific message contents

HANDOVER FROM UTRAN COMMAND (step 4)

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 3
Integrity check info	
- Message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	Now
RAB Info	
- RAB identity	0000 0001B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	CS domain
- NAS Synchronization Indicator	Not present
- Re-establishment timer	Use T314
Inter-system message	
- CHOICE System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	GSM message List
- Message	GSM HANDOVER COMMAND formatted and coded according to GSM specifications as BIT STRING (1..512). The first/ l*eftmost/ most significant* bit of the bit string contains bit 8 of the first octet of the GSM message. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.6.5.1 of TS 3GPP 51.010-1.

8.3.7.17.5 Test requirements

At step 6 the SS receives a handover access burst on the traffic channel of the GSM cell indicating that the UE has switched to the GSM cell.

At step 13 the SS receives a HANDOVER COMPLETE message indicating a successful handover to the GSM cell.

At step 15 SS receives ROUTING AREA UPDATE REQUEST message.

After step 18, SS should either receive DEACTIVATE PDP CONTEXT REQUEST message with cause as “Qos not accepted” or receive a MODIFY PDP CONTEXT ACCEPT message from UE

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31 Jan – 04 Feb 2005

T1-050429*(revT1-050406, 050092)*

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1115** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correcting Initial Conditions of Inter-RAT 8.3.7. test cases
Source:	⌘	MCC task 160, Motorola
Work item code:	⌘	TEI
Date:	⌘	20/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	1. In the UTRAN to GERAN handover test cases the GSM cell is configured as per section 26 in the initial conditions. This doesn't simulate a real network scenario where R99 networks support GPRS cells. Inter-RAT test cases must simulate a GPRS cell to simulate real network conditions. 2. Editorial Correction – the specification GSM 11.10 has been superceded by 51.010
Summary of change:	⌘	In initial conditions, GPRS cell is configured based on cell configuration in section 40 of 51.010 for GCF priority test cases. All GSM 11.10 references are replaced with reference to 51.010
Consequences if not approved:	⌘	Test as specified does not simulate real network scenario. Test does not match GERAN-UTRAN 60. series test cases in 51.010

Clauses affected:	⌘	8.3.7.1.4, 8.3.7.2.4 , 8.3.7.3.4, 8.3.7.4.4, 8.3.7.5.4, 8.3.7.7.4, 8.3.7.12.4, 8.3.7.13.4, 8.3.7.16.4

Other specs affected:	⌘	Y	N		⌘	
			X	Other core specifications		
		X		Test specifications		34.123-3
			X	O&M Specifications		

Other comments:	⌘	This CR is applicable to Rel. 99 and later MS. This capability is already present in the TTCN, but can be disabled by the operator by setting a PICs parameter to FALSE. If this document is approved, the ability to disable this capability will be

removed from the TTCN.

8.3.7.1.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause ~~26.6.5.1~~40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM AMR,
- UE supports GSM EFR,
- UE supports GSM FR,
- UE supports GSM HR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

<< End of changes to this section >>

<< next modified section >>

8.3.7.2.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

<< End of changes to this section >>

<< next modified section >>

8.3.7.3.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,
- UE supports GSM 14.4 kbps data (full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),
- ,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.
- UE support CS and PS service.

Foreseen final state of the UE

The UE is in CC state U10 on cell 9.

<< End of changes to this section >>

<< next modified section >>

8.3.7.4.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN AMR,
- UE supports GSM FR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U1 on cell 9.

<< End of changes to this section >>

<< next modified section >>

8.3.7.5.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9. The ARFCN value shall be according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN).

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM FR,
- UE supports UTRAN AMR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS
- UE supports compressed mode (FDD only).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

<< End of changes to this section >>

<< next modified section >>

8.3.7.7.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 section ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

<< End of changes to this section >>

<< next modified section >>

8.3.7.12.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010~~11.10 1~~ section ~~26.6.5.1~~ 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

<< End of changes to this section >>

<< next modified section >>

8.3.7.13.4 Method of test

Initial conditions

System Simulator ~~: 1 UTRAN cell.~~ 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010-1 26.6.5.1 section 40 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9.

UE : CC State U0 (NULL state) in cell 1.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U0 (NULL) on cell 1.

Test Procedure

The SS activates the UTRAN cell and GSM Cell. The UE is triggered to initialise an MO speech call. During the call establishment phase, the SS is configured to not transmit the RLC Acknowledgment for SETUP message. SS configures a dedicated channel in GSM Cell, then sends the UE an HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The SS checks MS correctly retransmits CC SETUP message, that was not acknowledged by UTRAN RLC Layer before the Handover, following completion of the handover to GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	SS does not Acknowledge it
3	SS			The SS starts the GSM cell and configure a dedicated channel SDCCH.
4	←		HANDOVER FROM UTRAN COMMANDGSM	Send via the UTRA configuration and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11			Void	
12			Void	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.
14	->		SETUP	The SS receives the message on the dedicated channel of GSM cell.
15	<-		CHANNEL RELEASE	

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band - CHOICE GSM message - Message	 GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 51.010~~11.10-1 version 8.2.0 Release 1999~~

8.3.7.13.5 Test requirement

At step 14 the SS shall receive SETUP message on the dedicated channel of the GSM cell.

<< End of changes to this section >>

<< next modified section >>

8.3.7.16.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 9 is GPRS with BCCH. 51.010 clause 40.1.1 shall be referenced for the default parameters, and clause 26.6.5.1 shall be referenced for cell allocation of cell 9

UE: Registered Idle Mode on CS/PS (state 7) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statements

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports UTRAN Conversational /Speech UL: 12.2kbps DL: 12.2 kbps /CS RAB+ Interactive or Background UL: 64kbps DL: 64kbps /PS RAB + uplink: 3.4 DL: 3.4 kbps SRBs
- UE supports UE operation mode A: PS and CS simultaneously
- UE supports GPRS operation mode class B

Foreseen final state of the UE

UE is in packet Idle mode on cell 9

<< End of changes to this section >>

3GPP TSG T1 Meeting #26
Bangarole, India, 31th January – 4th Feburary 2005

Tdoc⌘ T1-050430
Agenda Item 8.8.11

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.123-1 CR** 1116 ⌘**rev** - ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS34.123-1 Rel-5; Addition of new HSDPA test case (Revision of T1-050179, T1-050265)
Source:	⌘	NTT DoCoMo
Work item code:	⌘	HSDPA
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change: ⌘ New HSDPA test cases is added.

Summary of change: ⌘

The following new HSDPA test case is added based on T1-041792 (State Transiton table for HSDPA).

8.2.3.35 Radio Bearer Release for transition from CELL_DCH to CELL_PCH: Success (stop of HS-DSCH reception)

Note: This test case uses one RB multiplexing option.

Revision1 (From T1-050179)

- Corretiton to the Definition and applicability

- Radio Bearer Setup (Step 1):

The IE “Downlink information for each radio link list” was set to Not Present. However this IE contains the parameter “Serving HS-DSCH radio link indicator” and this parameter is needed when the UE starts reception of HS-DSCH. The IE should be present at Step1.

- Raio Bearer Release (Step3):

There is no reason to be restricted to “Speech in CS”. “Non Speech in CS” is

		also applicable for this test case. Revision2 (From T1-050265) ➢ Update of conformance requirement.
Consequences if not approved:	⌘	Lack of test coverage for HSDPA

Clauses affected:	⌘	8.2.3.35 (new)			
Other specs affected:	⌘	**Y** / **N** ☐ / **X**	Other core specifications	⌘	TS34.123-2
		X / ☐	Test specifications		
		☐ / **X**	O&M Specifications		
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.3.35 Radio Bearer Release for transition from CELL_DCH to CELL_PCH: Success (stop of HS-DSCH reception)

8.2.3.35.1 Definition and applicability

All UEs which support FDD, ~~and~~ HS-PDSCH and simultaneous CS and PS services.

8.2.3.35.2 Conformance requirement

If the new state is CELL_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

1> when RLC has confirmed the successful transmission of the response message:

…

2> enter the new state (CELL_PCH);

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

…

~~If the IE "Downlink HS-PDSCH Information" is not included, the UE shall:~~

~~1> set the variable HS_DSCH_RECEPTION to FALSE;~~

~~1> stop HS-DSCH reception procedures according to the stored HS-PDSCH configuration.~~

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> the UE has a stored IE "HARQ info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Reference

3GPP TS 25.331 clauses 8.2.2.4, 8.6.3.1,8.5.25~~, 8.6.6.32~~

8.2.3.35.3 Test purpose

To confirm that the UE releases CS bearer and stops receiving the HS-DSCH reception according to the received RADIO BEARER RELEASE message.

8.2.3.35.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports both CS and PS domains

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS34.108 clause 7.4. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH estabiiehed. The SS initiates P24 to set up CS RAB.

Then SS transmits a RADIO BEARER RELEASE message to the UE. This message requests to release CS bearer, stop receving the HS-DSCH reception and move to CELL_PCH state. After the UE receives this message, it configures them. Finally the UE transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC. SS calls for generic procdure C.4 to check that UE is in CELL_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		

1	←→	P25	See below for the specific message content used in RADIO BEARER SETUP message (Step 1)
2	←→	P24	SS establishes CS RAB.
3	←	RADIO BEARER RELEASE	SS releases CS RAB.
4	→	RADIO BEARER RELEASE COMPLETE	
5	←→	CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for “Packet to CELL_DCH /HS-DSCH from CELL_DCH in PS ” in TS34.108, except for the followings;

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
~~Downlink information for each radio link list~~	~~Not present~~

RADIO BEARER RELEASE (Step 3)

Use the same message as specified for “Speech in CS ” or "Non Speech in CS" in TS34.108, except for the followings;

Information Element	Value/remark
RRC state indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	Not present
Downlink information for each radio link list - Primary CPICH info - Primary scrambling code	 100

8.2.3.35.5 Test requirements

After step 3, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.123-1** **CR** 1117 ⌘ **rev** - ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS34.123-1 Rel-5; Correction to TC 8.2.4.36 (Revision of T1-050181, T1-050266)
Source:	⌘	NTT DoCoMo
Work item code:	⌘	HSDPA
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*
Rel-7 *(Release 7)*

Reason for change: ⌘

From the operator's point of view, TFCS reconfiguration procedure for limitting the uplink transmission rate to 32kbps is needed in order to avoid resource insufficient since there will be lots of UEs available in the future live network.

Summary of change: ⌘

Include the TFCS reconfiguration procedure for limitting the uplink transmission rate to 32kbps in this uplink rate modification test case like the following;

- The SS requests TFCS Reconfiguration from 384kbps to 32kbps via 64kbps (384kbps -> 64kbps -> 32kbps) by TRANSPORT CHANNEL RECONFIGURATION message. Then SS requests the UE to revert to 384kbps via 64kbps using the same procedure.

Revision1 (From T1-050181)

➢ Radio Bearer Setup (Step 0):
The IE "Downlink information for each radio link list" was set to Not Present. However this IE contains the parameter "Serving HS-DSCH radio link indicator" and this parameter is needed when the UE starts reception of HS-DSCH. The IE should be present at Step0.

Revision2 (From T1-050266)

		➢ Update of conformance requirement.
Consequences if not approved:	⌘	Limit of the test coverage for HSDPA

Clauses affected:	⌘	8.2.4.36			
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<<START OF MODIFICTATION>>

8.2.4.36 Transport Channel Reconfiguration from CELL_DCH to CELL_DCH: Success (with active HS-DSCH reception, not changing the value of TTI during UL rate modification)

8.2.4.36.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.4.36.2 Conformance requirement

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

~~…~~

~~If the IE "Downlink HS-PDSCH Information" is included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message, the UE shall:~~

~~1> if the IE "New H-RNTI" is included:~~

~~2> perform the actions as specified in subclause 8.6.3.1b of TS 25.331.~~

~~1> if the IE "HS-SCCH Info" is included:~~

~~2> act as specified in subclause 8.6.6.33 of TS 25.331.~~

~~1> if the IE "Measurement Feedback Info" is included:~~

~~2> act as specified in subclause 8.6.6.34 of TS 25.331.~~

~~1> For FDD, if, as a result of the received message, the variable H_RNTI is set and the UE has a stored IE "HS-SCCH Info" and a stored IE "Measurement Feedback Info"; and~~

~~1> For FDD, if the UE has received IE "Uplink DPCH Power Control Info" and stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor; and~~

~~1> For FDD, if the UE has stored IEs "MAC-hs queue to add or reconfigure list", "MAC-d PDU size Info" and "RB Mapping Info" corresponding to the HS-PDSCH configuration;~~

~~2> set the variable HS_DSCH_RECEPTION to TRUE;~~

~~2> start HS-DSCH reception procedures according to the stored HS-PDSCH configuration:~~

~~3> as stated in subclause 8.6.3.1b of TS 25.331 for the IE "H-RNTI";~~

~~3> in subclause 8.6.6.33 of TS 25.331 for the IE "HS-SCCH Info"; and~~

~~3> in subclause 8.6.6.34 of TS 25.331 for the IE "Measurement Feedback Info".~~

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> the UE has a stored IE "HARQ info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";

- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;

…

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

…

Reference

3GPP TS 25.331 clauses 8.2.2, 8.6.3.1, 8.2.2.3, 8.5.25

8.2.4.36.3 Test purpose

To confirm that the UE reconfigures the transport and physical channel while being mapped to HS-DSCH according to the received TRANSPORT CHANNEL RECONFIGURATION message.

To confirm that the UE keeps the same value of TTI (transmission time interval) during the procedure.

8.2.4.36.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established using a 384 kbps uplink DCH.

The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to limit~~modify~~ the uplink transmission rate. This message includes a new UL DCH TFCS for uplink 64kbps transmission rate, but the TTI remains unchanged. After the UE receives this message, it reconfigures the transport and physical channel and transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC. Upon successfully received the complete message from the UE, ~~T~~Then SS transmits ~~one more~~another TRANSPORT CHANNEL RECONFIGURATION message to limit the uplink transmission rate to 32kbps. After the UE receives this message, it reconfigures the transport and physical channel and transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Next the SS transmits a new TRANSPORT CHANNEL RECONFIGURATION message to the UE which includes an old UL DCH TFCS for uplink 64kbps transmission rate~~used in the initial procedure~~ in order to remove the ~~previous limitaition~~limitation ~~on~~for uplink 32kbps transmission rate and keeps the transmission time interval. Upon received this message, ~~T~~the UE reconfigures the transport and physical channel and transmits a TRANSPORT CHANNEL RECONFIGURAITON COMPLETE message using AM RLC. The~~n~~ SS then transmits one more TRANSPORT CHANNEL RECONFIGURATION message to remove the limitation ~~the~~for uplink 64kbps transmission rate ~~to~~and assign a new uplink 384kbps transmission rate. After the UE receives this message, it reconfigures the transport and physical channel and transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message. (Step 0)
1	←		TRANSPORT CHANNEL RECONFIGURATION	Limit the uplink transmission rate to 64 kbps
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3	←		TRANSPORT CHANNEL RECONFIGURATION	Limit the uplink transmission rate to 32 kbps
4	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
5	←		TRANSPORT CHANNEL RECONFIGURATION	Remove the limitation on the uplink rate and move to 64kbps
6	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
~~3~~7	←		TRANSPORT CHANNEL RECONFIGURATION	Remove the limitation on the uplink rate and move to 384kbps
~~4~~8	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
~~5~~9	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0)

Use the same message as specified for “Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS” in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup - PDCP info - Transmission RLC discard - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Timer_poll_prohibit - Timer_poll - Poll_Windows - Receiving window size - Downlink RLC status info - Timer_status_prohibit	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10, with the following exceptions; Not present 10 256 1000 12 50 400 80 2047 50
UL Transport channel Information for all transport channels	
- CHOICE Gain Factors - Gain factor β c - Gain factor β d	Computed Gain Factors (The last TFC is set to Signalled Gain Factors) 10 (below 64 kbps) 8 (higher than 64 kbps) 15 (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
Added or Reconfigured UL TrCH information - Transmission Time Interval	 10ms
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Maximum allowed UL TX power	24dBm
CHOICE channel requirement - Δ_{ACK} - Δ_{NACK}	 6 6
Downlink HS-PDSCH Information - Measurement Feedback Info - POhsdsch - CQI Feedback cycle, k - Δ_{CQI}	 9dB 10ms 3
~~Downlink information for each radio link list~~	~~Not present~~

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the same message as specified for “Packet to CELL_DCH from CELL_DCH in PS” in 34.108, except for the following:

Information Element	Value/remark
UL Transport channel information for all transport channels - UL DCH TFCS	 Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
CHOICE channel requirement - Uplink DPCH power control info - CHOICE mode - Scrambling code type - Scrambling code number - Number of DPDCH - Spreading factor - TFCI existence - Number of FBI bit - Puncturing Limit	Uplink DPCH info Same contents as a RADIO BEARER SETUP message used in the initial procedure FDD Long 1 Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
Downlink information for each radio link list	Not present

TRANSPORT CHANNEL RECONFIGURATION (Step 3)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
UL Transport channel information for all transport channels - UL DCH TFCS	 Set according to the radio bearer configuration for "Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
CHOICE channel requirement - Uplink DPCH power control info - CHOICE mode - Scrambling code type - Scrambling code number - Number of DPDCH - Spreading factor - TFCI existence - Number of FBI bit - Puncturing Limit	Uplink DPCH info Same contents as a RADIO BEARER SETUP message used in the initial procedure FDD Long 1 Not Present Set according to the radio bearer configuration for "Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Set according to the radio bearer configuration for "Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Not Present Set according to the radio bearer configuration for "Interactive or background / UL:32 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
Downlink information for each radio link list	Not present

TRANSPORT CHANNEL RECONFIGURATION (Step 5)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
UL Transport channel information for all transport channels - UL DCH TFCS	 Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
CHOICE channel requirement - Uplink DPCH power control info - CHOICE mode - Scrambling code type - Scrambling code number - Number of DPDCH - Spreading factor - TFCI existence - Number of FBI bit - Puncturing Limit	Uplink DPCH info Same contents as a RADIO BEARER SETUP message used in the initial procedure FDD Long 1 Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
Downlink information for each radio link list	Not present

TRANSPORT CHANNEL RECONFIGURATION (Step ~~3~~7)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
UL Transport channel information for all transport channels - UL DCH TFCS	 Same contents as the RADIO BEARER SETUP message used in the initial procedure.
CHOICE channel requirement - Uplink DPCH power control info - CHOICE mode - Scrambling code type - Scrambling code number - Number of DPDCH - Spreading factor - TFCI existence - Number of FBI bit - Puncturing Limit	Uplink DPCH info Same contents as a RADIO BEARER SETUP message used in initial procedure FDD Long 1 Not Present Same contents as the RADIO BEARER SETUP message used in the initial procedure. Same contents as the RADIO BEARER SETUP message used in the initial procedure. Not Present Same contents as the RADIO BEARER SETUP message used in the initial procedure.
Downlink information for each radio link list	Not present

8.2.4.36.5 Test requirements

After step 1, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 3, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 5, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 7, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

<<END OF MODIFICATION>>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050440

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1121 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to Package 4 GMM test case 12.4.1.1b
Source:	⌘	Aeroflex
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	According to 24.008 clause 4.1.1.1, the ROUTING AREA UPDATE ACCEPT message shall be integrity protected unless it is for periodic routing area update with no change of routing area or temporary identity. In step 16, the routing area update procedure is initiated with the type 'RA updating' and the P-TMSI is sent in the accept message. Therefore, the ROUTING AREA UPDATE ACCEPT message shall be integrity protected.
Summary of change:	⌘	Step 16a added to request SS to start integrity.
Consequences if not approved:	⌘	The prose and the TTCN will not be aligned.

Clauses affected:	⌘	12.4.1.1b

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This CR does not have impact on the TTCN.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of Modification>

12.4.1.1b Routing area updating / accepted / Signalling connection re-establishment

12.4.1.1b.1 Definition

12.4.1.1b.2 Conformance requirement

When the UE receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", then the UE shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not.

Reference

3GPP TS 24.008 clause 4.7.2.5, 4.7.5.1

12.4.1.1b.3 Test purpose

To test the behaviour of the UE if the UE receives a RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment".

12.4.1.1b.4 Method of test

Initial condition

System Simulator:

One cell(Cell A) in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode II. ATT flag is set to 0.

User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.

b) After the Service request procedure is complete, the SS sends the RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment" to the UE.

c) After the UE release the RRC connection, the UE initiate immediately a normal routing area update procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).

Step	Direction		Message	Comments
	UE	SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
10	SS			The SS starts integrity protection.
11	SS			The SS releases the RRC connection, using Release cause=Directed Signalling Connection Re-establishment
12			Void	
13	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Call re-establishment".
14			Void	
15			Void	
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' (FOR bit not checked) Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
16a				The SS starts integrity protection.
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
21	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.4.1.1b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, UE shall;

- initiate the routing area updating procedure whether the routing area has been changed since the last update or not.

<End of Modification>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan – 4th Feb, 2005

Tdoc ⌘T1-050442

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1122** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to NAS GMM test case 12.3.2.8 (GCF Work Item 12)
Source:	⌘	Anite, R&S
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘

1) The RRC connection release procedure should be called to terminate the preceeding Attach Procedure , step 20-25 of the expected sequence.The release procedure should be mentioned explicitly.

2) TS 34.123-1 section **12.3.2.8.4.1** implies that after Step 25 of the expected sequence the UE should send a RRC Connection request immediately, whereas according to section **12.3.2.8.5.1**(test requirements) the UE should initiate the ROUTING AREA UPDATE procedure only after T3312 expires.

Thus, after Step 25, a step is required to check that the UE does not send an RRC connection request till T3312 expires.

3) At step 8 and 24, the prose states that a new T3312 timer value should be allocated to the UE in this test, however the ATTACH ACCEPT message IE is named "Periodic RA Update Timer" in 3GPP TS 24.008 clause 9 and not T3312. To clear up the meaning in the prose, the correct IE name should be given with "T3312" given as additional information.

Summary of change: ⌘

1) New Step 25a is added which specifies “The SS releases the RRC connection”.

2) New Step 25b is added after Step 25 which specifies:

“The SS verifies that the UE does not attempt to access the network for T3312.”

3) In step 8 and 24, the IE name for T3312 has been corrected to be Periodic RA Update Timer.

Consequences if not approved:	⌘	Specification will be inconsistent.

B

Clauses affected:	⌘	12.3.2.8.4.1			
Other specs affected:	⌘	**Y** / **N**		⌘	
			X Other core specifications		
			X Test specifications		
			X O&M Specifications		
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

12.3.2.8 PS detach / rejected / PS services not allowed in this PLMN

12.3.2.8.1 Definition

12.3.2.8.2 Conformance requirement

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE:

1. shall delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored, shall set the PS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall change to state GMM-DEREGISTERED.

2. shall store the PLMN identity in the "forbidden PLMNs for PS service" list.

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE operating in UE operation mode A in network operation mode I:

1. shall set the timer T3212 to its initial value and restart it, if it is not already running.

2. is still IMSI attached for CS services in the network.

Reference(s):

3GPP TS 24.008 subclause 4.7.4.2.2

12.3.2.8.3 Test purpose

Test purpose for Test procedure1

To test the behaviour of the UE if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement1, 2).

Test purpose for Test procedure2

To test the behaviour of the UE operating in UE operation mode A in network operation mode I if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement3, 4).

12.3.2.8.4 Method of test

12.3.2.8.4.1 Test procedure1

Initial conditions

System Simulator:

Two cells cellA in MCC1/MNC1/LAC1/RAC1, cellB in MCC1/MNC2/LAC2/RAC1.
Both two cells are operating in network operation mode II.
The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- UE operation mode C Yes/No (only if mode A not supported)..
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

Two cells are configured.

Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

The UE initiates a PS attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE does not perform a periodic ROUTING AREA UPDATE procedure in this PLMN after the timer T3312 is expired and does not respond a paging for PS services.

Cell B transmits with high power so that the UE attempts an attach procedure to cell B.

The UE initiates a PS attach procedure.

The SS verifies that the UE performs a periodic ROUTING AREA UPDATE procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A or C (see ICS).
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
6	->		AUTHENTICATION AND CIPHERING RESPONSE	
7		SS		The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC1,MNC2 Periodic RA Update Timer (T3312) = 6minutes
9	->		ATTACH COMPLETE	
10	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
11	->		DETACH ACCEPT	
12		SS		The SS releases the RRC connection.
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	UE			The SS verifies that the UE does not attempt to access the network for T3312.
				The following messages are sent and shall be received on cell B.
16		SS		Set the cell type of cell A to the "Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell " (see note)
17				Cell B is preferred by the UE. Step 18 is only performed for non-auto attach UE.
18			Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
19				The UE initiates an attach automatically (See ICS), by MMI or AT command.
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
21	<-		AUTHENTICATION AND CIPHERING REQUEST	
22	->		AUTHENTICATION AND CIPHERING RESPONSE	
23		SS		The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-9 Equivalent PLMNs = MCC1,MNC1 Periodic RA Update Timer (T3312) = 6minutes
25	->		ATTACH COMPLETE	

25a	SS		The SS releases the RRC connection.
25b	SS		The SS verifies that the UE does not attempt to access the network for T3312.
26	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
27	->	ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-9
28	<-	ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated' Equivalent PLMNs = MCC1,MNC1
29	UE		The UE is switched off or power is removed (see ICS).
30	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off,
31	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.8.4.2 Test procedure2

Initial conditions

System Simulator:

One cell is operating in network operation mode I: MCC1/MNC1/LAC1/RAC1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

One cell is configured.

The UE initiates a combined attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE performs a periodic location area updating procedure after the timer T3212 is expired.

The SS verifies that the UE responds a paging for CS services.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	<-		AUTHENTICATION AND CIPHERING REQUEST	
5	->		AUTHENTICATION AND CIPHERING RESPONSE	
6	SS			The SS starts integrity protection.
7	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
8	->		ATTACH COMPLETE	
9	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
10	->		DETACH ACCEPT	
11				The SS releases the RRC connection
12	SS			The SS waits for the UE to expiry the timer T3212.
13	UE		Registration on CS	The UE performs a location update procedure. See TS 34.108 Mobile identity = IMSI
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
15	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16	->		PAGING RESPONSE	Mobile identity = IMSI
17				The SS releases the RRC connection
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.8.5 Test Requirement

12.3.2.8.5.1 Test Requirement for Test procedure1

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step11, when the UE receives DETACH REQUEST message with the cause "GPRS services not allowed in this PLMN", the UE shall:

- send DETACH ACCEPT message.

At step13, when the UE receives the paging for PS services with "Mobile identity = P-TMSI-2", the UE shall;

- not respond to the paging for PS services.

At step14, when the time T3312 is expired, the UE shall:

- not attempt to access the network.

At step20, when the UE enters the different cell with the equivalent PLMN, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step27, when the time T3312 is expired, the UE shall:

- initiate the periodic routing area updating procedure with the information elements specified in the above Expected Sequence.

12.3.2.8.5.2 Test Requirement for Test procedure2

At step3, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives DETACH REQUEST message with cause "GPRS services not allowed in this PLMN ", the UE shall:

- send DETACH ACCEPT message.

At step12, while the SS wait for the timer T3312 to expire, the UE shall:

- not perform the periodic location area updating procedure.

At step13, when the T3212 timer is expired, the UE shall:

- initiate the periodic location area updating procedure.

At step16, when the UE receives the paging for CS services with "Mobile identity = IMSI", the UE shall;

- respond to the paging for CS services by sending the PAGING RESPONSE message.

<< END OF MODIFIED SECTION >>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050443

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1123** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GMM clause
Source:	⌘	Nokia
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Added clarification for T3212 value and ATT flag setting used in GMM clause.
Summary of change:	⌘	Phrase "The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00"." is easily misleading. That sentence has been replaced with "T3212 value is set to 0 and ATT flag is set to FALSE".
Consequences if not approved:	⌘	Specification might be unclear.

Clauses affected:	⌘	12			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12 Elementary procedure for Packet Switched Mobility Management

12.1 Applicability, default conditions and default messages

All test cases for PS mobility management apply for all PS mobiles unless otherwise stated in a specific test. Within each test case, the ICS statement indicates whether the test shall be performed for mobiles that can only operate in mode - class A, only in mode - class C , or in both mode - class A and C. For some procedures, the mobile class is of no importance.

Note that only the layer 3 messages are described in the document. The mapping of the layer 3 messages to lower layers and the use of logical channels is not described in the present document.

The terms 'PS/CS mode of operation' and 'PS mode of operation' are not used in the present document with some exceptions. Instead the terms 'UE operation mode A' and 'UE operation mode C' are used.

If UE supports mode A and C; the operation mode change from C to A during the test and the resulting signalling caused by the mode change, are out of test scope and up to implementation.

The default conditions and default message contents not specified in this clause must be set as in "PS default conditions"

Below is a list of the RAI values and the corresponding RAC, LAC and MCC used in the test cases:

RAI-1: MCC1/MNC1/LAC1/RAC1 (Used if only one cell)

RAI-2: MCC2/MNC1/LAC1/RAC1

RAI-3: MCC1/MNC1/LAC2/RAC1

RAI-4: MCC1/MNC1/LAC1/RAC2

RAI-5: MCC1/MNC1/LAC1/RAC3

RAI-6: MCC2/MNC1/LAC2/RAC1

RAI-7: MCC2/MNC1/LAC1/RAC2

RAI-8: MCC1/MNC2/LAC1/RAC1

RAI-9: MCC1/MNC2/LAC2/RAC1

RAI10: MCC1/MNC2/LAC1/RAC2

RAI-11: MCC1/MNC3/LAC1/RAC1

RAI-12: MCC1/MNC1/LAC2/RAC2

If the User Equipment initial condition specifies that the mobile has a valid IMSI but the initial condition does not mention P-TMSI, than that shall be interpreted as that the mobile has no valid P-TMSI.

The tests are based on 3GPP TS 24.008.

12.2 PS attach procedure

This procedure is used to indicate for the network that the IMSI is available for traffic by establishment of a GMM context.

12.2.1 Normal PS attach

The normal PS attach procedure is a GMM procedure used by PS UEs of UE operation mode A or C to IMSI attach for PS services only.

12.2.1.1 PS attach / accepted

12.2.1.1.1 Definition

12.2.1.1.2 Conformance requirement

1) If the network accepts the PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.3.1

12.2.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed.

12.2.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI.

2) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS reallocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.

3) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the old P-TMSI.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If this is not supported by the UE, goto step 26.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause: Terminating interactive call
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "paging response"
7a	SS			The SS starts integrity protection and releases the RRC connection.
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to **"**Detach" (message not sent if power is removed).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
9a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
10	UE			The UE is powered up or switched on and initiates an attach (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14			Void	

Step	Direction		Message	Comments
	UE	SS		
14b			Void	
14c	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
14d		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
15	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10 seconds.
17	UE			The UE is switched off or power is removed (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
18a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE			The UE is powered up or switched on and initiates an attach (see ICS).
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.
21	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
22	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause: Terminating interactive call
22a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
22b			Void	
22c			Void	
23	->		SERVICE REQUEST	Service type = "paging response"
23aa		SS		The SS starts integrity protection and releases the RRC connection.
23a			Void	
23b			Void	
24	UE			The UE is switched off or power is removed (see ICS).
24a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

Step	Direction		Message	Comments
	UE	SS		
25a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
26	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25a.

Specific message contents

None.

12.2.1.1.5 Test requirements

At step 2a, 10a and 19a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a and 22a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 8a, 17a and 24a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, 11 and 20, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Mobile identity in the ATTACH REQUEST message and on the Mobile identity in the ATTACH ACCEPT message.

Case 1) The Mobile identity in the ATTACH REQUEST message is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

At step5, UE shall:

- acknowledge the P-TMSI by sending the ATTACH COMPLETE message.

Case 2) The Mobile identity in the ATTACH REQUEST message is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the new P-TMSI.

At step13, UE shall:

- acknowledge the new P-TMSI by sending the ATTACH COMPLETE message.

At step23, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.1.2 PS attach / rejected / IMSI invalid / illegal UE

12.2.1.2.1 Definition

12.2.1.2.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS, the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal MS, the User Equipment shall delete the LAI.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'illegal MS.

12.2.1.2.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in

MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).

All three cells are operating in network operation mode II (in case of UE operation mode A).

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal MS'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
				The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.
2	SS			The SS is set in network operation mode II.
				Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "Non-Suitable cell".
				Set the cell type of cell C to the "Non-Suitable cell".
				(see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4		->	ATTACH REQUEST	Attach type = 'GPRS attach'
				Mobile identity = P-TMSI-1
				Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'Illegal MS'.
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Non-Suitable cell".
				Set the cell type of cell B to the "Serving cell".
				(see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			The UE initiates an attach by MMI or by AT command.
10	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
11	SS			Set the cell type of cell B to the "Non-Suitable cell".
				Set the cell type of cell C to the "Serving cell".
				(see note)
12	UE			Cell C is preferred by the UE.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
17	UE			The UE is powered up or switched on.
18	UE		Registration on CS	See TS 34.108
				This is applied only for UE in UE operation mode A.
				Parameter mobile identity is IMSI.
19	UE			The UE initiates an attach (see ICS).
20		->	ATTACH REQUEST	Attach type = 'GPRS attach'
				Mobile identity = IMSI
20a		<-	AUTHENTICATION AND CIPHERING REQUEST	
20b		->	AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.

21	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
22	->	ATTACH COMPLETE	
23	UE		The UE is switched off or power is removed (see ICS).
24	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
25	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, 10, 13 and 15, UE shall:

- not send the ATTACH REQUEST message to SS, even if there is an instruction of attach request from MMI or from AT command.

At step20, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

12.2.1.3 PS attach / rejected / IMSI invalid / PS services not allowed

12.2.1.3.1 Definition

12.2.1.3.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed' (no valid PS-subscription for the IMSI).

12.2.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'GPRS services not allowed'
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
7a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
10	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
13		->	ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
15a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

16			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
17	UE		The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, UE shall:

- not perform a PS attach procedure.

At step11, after the UE is switched on or a USIM is replaced, UE shall:

- perform the PS attach procedure.

12.2.1.4 PS attach / rejected / PLMN not allowed

12.2.1.4.1 Definition

12.2.1.4.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

   1.1 not perform PS attach when switched on in the same routing area or location area (except for the HPLMN).

   1.2 not perform PS attach when in the same PLMN and when that PLMN is not selected manually.

   1.3 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.4 store the PLMN in the 'forbidden PLMN' list.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall perform PS attach when a new PLMN is entered.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' and if after that the PLMN from which this rejection was received, is manually selected, the User Equipment shall perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.4.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PLMN not allowed'.

12.2.1.4.4 Method of test

12.2.1.4.4.1 Test procedure 1

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All four cells are operating in network operation mode II (in case of UE operation mode A). The PLMN of the four cells should NOT be that of the UE Home PLMN.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-8. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same routing area or location area and performs PS attach only when a new PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-8
5		<-	ATTACH REJECT	GMM cause = 'PLMN not allowed'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
7	UE			The UE is switched off.
8		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
9	UE			The UE is powered up or switched on.
10	UE			Cell B is preferred by the UE.
11	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
12		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
15		SS		Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16	UE			Cell D is preferred by the UE.
17	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
18	UE			The UE initiates an attach automatically, by MMI or by AT command.
19		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19a		<-	AUTHENTICATION AND CIPHERING REQUEST	
19b		->	AUTHENTICATION AND CIPHERING RESPONSE	
19c		SS		The SS starts integrity protection.

20	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
21	->	ATTACH COMPLETE	
22	UE		The UE is switched off or power is removed (see ICS).
23	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
24	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

12.2.1.4.4.2 Test procedure 2

Initial condition

System Simurator:

One cell operating in network operation mode II: MCC2/MNC1/LAC1/RAC1 (RAI-2). The PLMN of the cell should NOT be that of the Mobile Station Home PLMN.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The subscribers access rights is changed to allow PS attach. Then the PLMN from which this rejection was received is manually selected and the SS check that a PS attach is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C or A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'PLMN not allowed'
5	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6	UE			The current PLMN is selected manually.
7			Void	
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
9a	<-		AUTHENTICATION AND CIPHERING REQUEST	
9b	->		AUTHENTICATION AND CIPHERING RESPONSE	
9c	SS			The SS starts integrity protection.
10	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.1.4.5 Test requirements

Test requirements for test procedure 1

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform PS attach procedure.

UE shall perform the following actions depending on the PLMN or the routing area or the location area

Case 1) UE is in the same routing area or location area when the power is switched on,

At step11, UE shall:

- not perform PS attach procedure.

Case2) UE is in the same PLMN, and this PLMN is not selected manually

At step14, UE shall:

- not perform PS attach procedure.

Case3) UE is in a new PLMN.

At step19, UE shall:

- perform the PS attach procedure.

Test requirements for test procedure 2

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, UE shall:

- not perform PS attach procedure.

At step9, when the UE is in the new PLMN, and this PLMN is selected manually, UE shall

- perform the PS attach procedure.

12.2.1.5a PS attach / rejected / roaming not allowed in this location area

12.2.1.5a.1 Definition

12.2.1.5a.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment shall:

   1.1 not perform PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for roaming' list.

   1.4 perform PS attach when a new location area is entered.

   1.5 Periodically search for its HPLMN.

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

3) The UE shall be capable of storing at least 10 entries in the list of 'Forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5a.3 Test purpose

Test purpose 1

To test that on receipt of a rejection using the 'roaming not allowed in this location area' cause code, the UE ceases trying to attach on that location area. Successful PS attach procedure is possible in other location areas.

Test purpose 2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

Test purpose 3

To test that at least 6 entries can be held in the list of 'forbidden location areas for roaming' (the requirement in 3GPP TS 24.008 is to store at least 10 entries. This is not fully tested by the third procedure).

Test purpose 4

To test that if a cell of the Home PLMN is available then the UE returns to it in preference to any other available cell.

12.2.1.5a.4 Method of test

12.2.1.5a.4.1 Test procedure 1

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in

MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN) and cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN).

All three cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. A new attempt for a PS attach is not possible. Successful PS attach / detach procedures are performed in another location area. A new attempt for a PS attach is performed in the 1st location area. This attempt shall not succeed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a		<-	AUTHENTICATION AND CIPHERING REQUEST	
11b		->	AUTHENTICATION AND CIPHERING RESPONSE	
11c		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6
13		->	ATTACH COMPLETE	
13a		SS		The SS releases the RRC connection.
14	UE			The UE initiates a PS detach (without power off) by MMI or by AT command .
14a		SS		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
15		->	DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
16		<-	DETACH ACCEPT	
16a		SS		The SS releases the RRC connection.

17	SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE		Cell C is preferred by the UE.
19	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds). The UE is switched off or power is removed (see ICS)
20	UE		UE is switched off.
21	SS		Set the cell type of cell C to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A if supported (see ICS) and the test is repeated from step 2 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

12.2.1.5a.4.2 Test procedure 2

Initial condition

System Simulator:

One cell in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN) operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 s and switched on again. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

If USIM removal is possible without switching off: The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
2b	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
5	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
5a	SS			The SS releases the RRC connection.
6	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
7	UE			The UE is powered up or switched on and initiates an attach (see ICS).
8				
8a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
8b	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
9a	<-		AUTHENTICATION AND CIPHERING REQUEST	
9b	->		AUTHENTICATION AND CIPHERING RESPONSE	
9c	SS			The SS starts integrity protection.
10	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
11a	SS			The SS releases the RRC connection.
12	UE			The UE is switched off or power is removed (see ICS).
12a	SS			SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
12b			Void	
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

12.2.1.5a.4.3 Test procedure 3

Initial condition

System Simulator:

Six cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-3, Not HPLMN), cell C in MCC2/MNC1/LAC3/RAC1 (Not HPLMN), cell D in MCC2/MNC1/LAC4/RAC1 (Not HPLMN), cell E in MCC2/MNC1/LAC5/RAC1 (Not HPLMN), cell F in MCC2/MNC1/LAC6/RAC1 (Not HPLMN).
All six cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. This is done for 6 different location areas. Then the SS checks that the UE does not attempt to perform an attach procedure on the non-allowed location areas.

Different types of UE may use different methods to periodically clear the list of forbidden areas (e.g. every day at 12am) for roaming. If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
2	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
10a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
11		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
12		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
13	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell C.
14		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
15	UE			Cell C is preferred by the UE.

Step	Direction		Message	Comments
	UE	SS		
16	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
17a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
20	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
21a	SS			The SS releases the RRC connection.
21	SS			Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
22	UE			Cell D is preferred by the UE.
23	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
24	UE			The UE initiates an attach automatically, by MMI or by AT command.
24a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
25	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
27	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
27a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
				The following messages are sent and shall be received on cell E.
28	SS			Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Serving cell". (see note)
29	UE			Cell E is preferred by the UE.
30	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
31	UE			The UE initiates an attach automatically, by MMI or by AT command.
31a	SS			SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
32	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
33	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
34	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
34a	SS			The SS releases the RRC connection.
				The following messages are sent and shall be received on cell F.

Step	Direction		Message	Comments
	UE	SS		
35		SS		Set the cell type of cell E to the "Non-Suitable cell". Set the cell type of cell F to the "Serving cell". (see note)
36	UE			Cell F is preferred by the UE.
37	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
38	UE			The UE initiates an attach automatically, by MMI or by AT command.
38a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
39	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
40	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
41	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
41a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell E.
42		SS		Set the cell type of cell E to the "Serving cell". Set the cell type of cell F to the "Non-Suitable cell". (see note)
43		SS		Cell E is preferred by the UE.
44	UE			The UE initiates an attach automatically, by MMI or by AT command.
45	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
46		SS		Set the cell type of cell C to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
47		SS		Cell C is preferred by the UE.
48	UE			The UE initiates an attach automatically, by MMI or by AT command.
49	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell A.
50		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
51		SS		Cell A will be preferred by the UE.
52	UE			The UE initiates an attach automatically, by MMI or by AT command.
53	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

12.2.1.5a.4.4 Test procedure4

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (not HPLMN, RAI-2) and cell B in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1).

Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-2.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. A second cell belonging to the HPLMN is activated. It is checked that the UE returns to its HPLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
3b		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-2
5	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
6a		SS		The SS releases the RRC connection.
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	UE			The UE initiates an attach automatically, by MMI or by AT command.
9a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
10a	<-		AUTHENTICATION AND CIPHERING REQUEST	
10b	->		AUTHENTICATION AND CIPHERING RESPONSE	
10c		SS		The SS starts integrity protection.
11	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
12	->		ATTACH COMPLETE	
12a	->			The SS releases the RRC connection.
13	UE			The UE is switched off or power is removed (see ICS).
13a		SS		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
13b			Void	
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

15	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5a.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform the PS attach procedure.

At step11, when the new location area is entered, UE shall:

- perform the PS attach procedure

At step19, when the rejected location area is entered, UE shall

- not perform PS attach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step9, when the UE is switched off or USIM is replaced, UE shall:

- perform the PS attach procedure.

Test requirements for Test procedure3

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, 13, 20, 27, 34 and 41, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step11, 18, 25, 32 and 39 , UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step45, 49 and 53, UE shall:

- not perform PS attach procedure.

Test requirements for Test procedure4

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not perform PS attach procedure.

At step10, when a new location area is entered, UE shall:

- perform the PS attach procedure.

12.2.1.5b PS attach / rejected / No Suitable Cells In Location Area

12.2.1.5b.1 Definition

12.2.1.5b.2 Conformance requirement

(1) If the network rejects a PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 not perform PS attach when in the same location area.

1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

1.3 store the LA in the 'forbidden location areas for roaming' list.

1.4 not delete the list of "equivalent PLMNs".

1.5 perform PS attach when a new location area is entered.

Reference

3GPP TS 24.008 clauses 4.7.3.1.

12.2.1.5b.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'No Suitable Cells In Location Area'.

12.2.1.5b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6)

All three cells are operating in network operation mode II.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the equivalent PLMN and shall perform PS attach procedure in that cell.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-suitable cell". Set the cell type of cell C to the "Non-suitable cell". (see note)
3			Void	
3a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9			Void	
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11	<-		ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
12		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell C.
13	UE		Registration on CS	See TS 34.108
14	UE			The UE initiates an attach automatically, by MMI or by AT command.
14a				SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
16	<-		AUTHENTICATION AND CIPHERING REQUEST	
17	->		AUTHENTICATION AND CIPHERING RESPONSE	
18		SS		The SS starts integrity protection.
19	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20	->		ATTACH COMPLETE	

20a	SS		The SS releases the RRC connection.
21	UE		The UE is switched off or power is removed (see ICS).
21a	SS		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
22	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
23	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5b.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step15, when the UE enters a suitable cell in a different location area on the equivalent PLMN, UE shall:

- perform the PS attach procedure.

12.2.1.5c PS attach / rejected / Location area not allowed

12.2.1.5c.1 Definition

12.2.1.5c.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 reset the attach attempt counter.

   1.4 store the LAI in the list of "forbidden location areas for regional provision of service".

   1.1 perform a cell selection.

   1.2 not delete the list of "equivalent PLMNs".

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' and if the User Equipment is IMSI attached via MM procedures the User Equipment shall:

   2.1 set the update status to U3 ROAMING NOT ALLOWED.

   2.2 delete any TMSI, LAI and ciphering key sequence number.

   2.3 reset the location update attempt counter.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Location area not allowed'.

12.2.1.5c.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Location area not allowed'. The SS checks that the UE does not perform MM IMSI attach while in the same location area and performs PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			If UE operation mode A is supported, If UE operation mode C is supported, the UE is set in UE operation mode A (see ICS). If UE operation mode A is not supported, the UE is set in UE operation mode C.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
3a		SS		SS checks that the IE “Establishment cause” in the received RRC CONNECTION REQUEST message is set to “Registration”.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
4a	->		AUTHENTICATION AND CIPHERING REQUEST	
4b	<-		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note) The SS configures power level of each Cell as follows. Cell A > Cell B > Cell C
9			Void	
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'Location area not allowed'
11a		SS		The SS releases the RRC connection.
12		UE		The UE performs cell selection. The following messages are sent and shall be received on cell C.
12a	UE		Registration on CS	See TS 34.108. This is applied only for UE in UE operation mode A.
12b	UE			SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Registration”
13	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	

16	SS		The SS starts integrity protection.
17	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
18	->	ATTACH COMPLETE	
19	UE		No MM IMSI attach request sent to SS (SS waits 30 seconds).
19a	SS		The SS releases the RRC connection.
20	UE		The UE is switched off or power is removed (see ICS).
20a	SS		SS checks that the IE “Establishment cause” in any received RRC CONNECTION REQUEST message is set to “Detach”.
20b	UE	Detach on CS	This is applied only for UE in UE operation mode A.
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5c.5 Test requirements

At step4 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform cell selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI.

At step19, UE shall:

- not perform MM IMSI attach

12.2.1.5d PS attach / rejected / PS services not allowed in this PLMN

12.2.1.5d.1 Definition

12.2.1.5d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

1.4 perform a PLMN selection instead of a cell selection, if the UE is in UE operation mode C.

2) If the UE is in UE operation mode A or B and the network is in network operation mode II the User Equipment shall:

2.1 be still IMSI attached for CS services in the network..

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.2.1.5d.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = GPRS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1
5	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c		SS		The SS starts integrity protection.
6	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note)
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
12	UE			The UE performs PLMN selection. The following messages are sent and shall be received on cell C.
13	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
18	->		ATTACH COMPLETE	
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20			Void	
21	->		RRC CONNECTION REQUEST	
22	<-		RRC CONNECTION SETUP	

23	->	RRC CONNECTION SETUP COMPLETE	
24	->	PAGING RESPONSE	
25	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
26	->	RRC CONNECTION RELEASE COMPLETE	
27	UE		The UE is switched off or power is removed (see ICS).
28	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
29	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform PLMN selection.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step21, UE shall:

- respond the Paging for CS domain service.

12.2.1.6 PS attach / abnormal cases / access barred due to access class control

12.2.1.6.1 Definition

12.2.1.6.2 Conformance requirement

1) The UE shall not perform PS attach procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the PS attach procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (Cell is changed).

12.2.1.6.4 Method of test

12.2.1.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred.

System Simulator:

One cell operating in network operation mode II.
Access class x barred.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

The SS indicates that access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 12.
3	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
4	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
5	SS			The access class x is not barred anymore.
6	UE			The UE initiates a PS attach either automatically or manually (see ICS).
7	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
9	->		ATTACH COMPLETE	
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	SS			The SS is set in network operation mode II.
13	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 11.

12.2.1.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell A.

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred.
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid P-TMSI-2 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
		SS		The following messages are sent and shall be received on cell A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is set in UE operation mode C (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			The UE initiates an attach either automatically or manually (see ICS).
8		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
8a		<-	AUTHENTICATION AND CIPHERING REQUEST	
8b		->	AUTHENTICATION AND CIPHERING RESPONSE	
8c		SS		The SS starts integrity protection.
9		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
10		->	ATTACH COMPLETE	
11	UE			The UE is switched off or power is removed (see ICS).
12		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
13		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.1.6.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step7, when the UE access class x is granted, UE shall:

initiate the PS attach procedure.

Test requirements for Test procedure2

At step5, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step8, when the serving cell is changed, UE shall:

- initiate the PS attach procedure.

12.2.1.7 PS attach / abnormal cases / change of routing area

12.2.1.7.1 Definition

12.2.1.7.2 Conformance requirement

If a cell change into a new routing area occurs before an ATTACH ACCEPT or ATTACH REJECT message has been received, the GPRS attach procedure shall be aborted and re-initiated immediately.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.7.4 Method of test

Initial condition

System Simulator:

One cell with MCC1/MNC1/LAC1/RAC1 (RAI-1)
The cell is operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The ATTACH ACCEPT message is delayed from the SS. The UE receive a new routing area code. The UE shall re-initiate a PS attach procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		SS		No response to the ATTACH REQUEST message is given by the SS.
6			Void	
6a		<-	UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code. Note: SS transmits the updated system information with the new RAI information in SIB1
6b		->	UTRAN MOBILITY INFORMATION CONFIRM	
7	UE			The UE automatically re-initiates the attach.
8		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
8a		<-	AUTHENTICATION AND CIPHERING REQUEST	
8b		->	AUTHENTICATION AND CIPHERING RESPONSE	
8c		SS		The SS starts integrity protection.
9		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-4
10	UE			The UE is switched off or power is removed (see ICS).
11		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
11a				The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

UTRAN MOBILITY INFORMATION (step 6a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	Infinity
- ATT	0
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	1 (Network Mode of Operation II)
- CN domain specific DRX cycle length coefficient	7

12.2.1.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected sequence.

At step8, as the UE has received a new RAI in the UTRAN MOBILITY INFORMATION message before the ATTACH ACCEPT message or the ATTACH REJECT message is received by the UE, the UE shall:

- abort the PS attach procedure and re-initiate the PS attach procedure immediately with new information elements.

12.2.1.8 PS attach / abnormal cases / power off

12.2.1.8.1 Definition

12.2.1.8.2 Conformance requirement

When power is switched off before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and perform a PS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.

12.2.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.8.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE is switched off after initiating an attach procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 7.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
4	SS			No response to the ATTACH REQUEST message is given by the SS.
5	UE			The UE is powered off and initiates a PS detach (with power off) by
6	->		DETACH REQUEST	Detach type = 'power switched off, GPRS detach'
7	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 6.

Specific message contents

None.

12.2.1.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when power is switched off before ATTACH ACCEPT message is received, UE shall:

- abort the PS attach procedure and perform the PS detach procedure.

12.2.1.9 PS attach / abnormal cases / PS detach procedure collision

12.2.1.9.1 Definition

12.2.1.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message, the UE shall terminate the PS attach procedure and continue with the PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message, the UE shall ignore the PS detach procedure and continue with the PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (any cause except re-attach). The UE shall terminate the PS attach procedure and continue with the PS detach procedure**.**

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (cause re-attach). The UE shall ignore the PS detach procedure and continue with the PS attach.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7	UE			The UE initiates the attach procedure by MMI or AT command.
8	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
9	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach required'
11	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
16	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type in the DETACH REQUEST message.

Case1) Detach type = 're-attach not required' GMM cause is not re-attach

At step6, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- terminate the PS attach procedure and continue with the PS detach procedure.

Case2) Detach type = 're-attach required'

At step11, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- ignore the PS detach procedure and continue with the PS attach procedure.

12.2.1.10 PS attach / abnormal cases / Failure due to non-integrity protection

12.2.1.10.1 Definition

12.2.1.10.2 Conformance requirement

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

- GMM messages:
  - AUTHENTICATION & CIPHERING REQUEST
  - AUTHENTICATION & CIPHERING REJECT
  - IDENTITY REQUEST
  - ATTACH REJECT
  - ROUTING AREA UPDATE ACCEPT (at periodic routing area update with no change of routing area or temporary identity)
  - ROUTING AREA UPDATE REJECT
  - SERVICE REJECT
  - DETACH ACCEPT (for non power-off)

Reference(s):

3GPP TS 24.008 clause 4.1.1.1.1

12.2.1.10.3 Test purpose

To verify that the UE ignores NAS signalling messages when the security mode procedure is not activated.

12.2.1.10.4 Method of test

Initial Conditions

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid IMSI.

Related ICS Statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No

Test procedure

The attach procedure is initiated. Upon reception of ATTACH REQUEST message from the UE, the SS responds with an ATTACH ACCEPT message without the integrity protection. The UE shall ignore this message and re-transmit ATTACH REQUEST message at expiry of timer T3310.

This time the SS starts the authentication procedure and initiates the integrity protection. After receiving ATTACH ACCEPT message, the UE shall respond to ATTACH COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach procedure (see ICS).
3	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7	SS			The SS does not initiate the security mode procedure.
8	<-		ATTACH ACCEPT	
9	UE			The UE ignores ATTACH ACCEPT message.
10	SS			The SS waits 15 sec (T3310).
11	->		ATTACH REQUEST	The UE re-transmits the message. The SS verifies that the period of time between the ATTACH REQUEST messages corresponds to the value of T3310. Attach type = 'GPRS attach' Mobile identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
13	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
14	SS			The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Mobile identity = P-TMSI
16	->		ATTACH COMPLETE	
17	UE			The UE is switched off or power is removed (see ICS).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
19	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific Message Contents

None.

12.2.1.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall;

- ignore the first ATTACH ACCEPT message.

At step11, UE shall;

- re-transmit ATTACH REQUEST message after expiry of timer T3310.

At step16, UE shall;

- respond to ATTACH COMPLETE message after the UE receives the second ATTACH ACCEPT message.

12.2.2 Combined PS attach

12.2.2.1 Combined PS attach / PS and non-PS attach accepted

12.2.2.1.1 Definition

12.2.2.1.2 Conformance requirement

1) If the network accepts the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI, the UE shall continue communication with the previously used P-TMSI.

4) If the network accepts the combined PS attach procedure and determines that IMSI shall be used in CS operations, the UE shall continue communication with the IMSI for CS operations.

5) If the network accepts the combined PS attach procedure and determines that a TMSI shall be used in CS operations, the UE shall continue communication with the TMSI for CS operations.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed;

4) Mobile terminating CS call is allowed with IMSI;

5) Mobile terminating CS call is not allowed with TMSI.

12.2.2.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I. ATT flag is set to 0.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used.

2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

3) The UE is PS paged in order to verify that the new P-TMSI is used for PS services.

4) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS allocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI and a new TMSI. The UE acknowledge the P-TMSI and the TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the new TMSI is used. The UE is CS paged in order to verify that the new TMSI is used for CS services.

5) The UE is PS paged in order to verify that the new P-TMSI is used for PS services. The UE will not answer signalling addressed to the old P-TMSI.

6) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the previously used P-TMSI.

7) The UE is PS paged in order to verify that the previously used P-TMSI is used for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity =IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
7	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
8			Void	
9			Void	
10	->		PAGING RESPONSE	Mobile identity = IMSI
11	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
13a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
13b			Void	
13c			Void	
14	->		SERVICE REQUEST	service type = "paging response"
14aa	SS			The SS starts integrity protection.
14a	SS			The SS releases the RRC connection.
14b			Void	
15	UE			The UE is switched off or power is removed (see ICS).
15a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
16a	SS			If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

Step	Direction		Message	Comments
	UE	SS		
17	UE			The UE is powered up or switched on and initiates an attach (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 TMSI status = no valid TMSI available Old Routing area identity = RAI-1
18a	<-		AUTHENTICATION AND CIPHERING REQUEST	
18b	->		AUTHENTICATION AND CIPHERING RESPONSE	
18c		SS		The SS starts integrity protection.
19	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
20	->		ATTACH COMPLETE	
21			Void	
21b			Void	
21c		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
22	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
23		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
24			Void	
25			Void	
26	->		PAGING RESPONSE	Mobile identity = TMSI-1
27		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
28			Void	
29	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
29a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
29b			Void	
29c			Void	
30	->		SERVICE REQUEST	service type = "paging response"
30aa		SS		The SS starts integrity protection.
30a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
30b			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services Paging cause = "Terminating interactive call"
32	UE			No response from the UE to the request. This is checked for 10 seconds.
33	UE			The UE is switched off or power is removed (see ICS).
33a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
34	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'

Step	Direction		Message	Comments
	UE	SS		
34a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
35	UE			The UE is powered up or switched on and initiates an attach (see ICS).
35a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
36	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present
36a	<-		AUTHENTICATION AND CIPHERING REQUEST	
36b	->		AUTHENTICATION AND CIPHERING RESPONSE	
36c		SS		The SS starts integrity protection.
37	<-		ATTACH ACCEPT	No new mobile identity assigned. TMSI and P-TMSI not included. Attach result = 'Combined GPRS/IMSI attached' P-TMSI-3 signature Routing area identity = RAI-1
37a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
38	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services Paging cause = "Terminating interactive call"
38a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
38b			Void	
38c			Void	
39	->		SERVICE REQUEST	service type = "paging response"
39aa		SS		The SS starts integrity protection.
39a		SS		The SS releases the RRC connection.
39b			Void	
40	UE			The UE is switched off or power is removed (see ICS).
40a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
41	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
42		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

Specific message contents

None.

12.2.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

Case 1) SS accept the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI.

At step5, UE shall

- send the ATTACH COMPLETE message.

At step10, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step14, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 2) SS accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI and TMSI.

At step20, UE shall:

- send the ATTACH COMPLETE message.

At step26, when the UE receives the paging message for CS domain with Mobile identity = TMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step30, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 3) SS accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI.

At step39, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.2 Combined PS attach / PS only attach accepted

12.2.2.2.1 Definition

12.2.2.2.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.2.3 Test purpose

Test purpose1

To test the behaviour of the UE if the network accepts the PS attach procedure with indication PS only, GMM cause 'IMSI unknown in HLR'.

Test purpose2

To test the behaviour of the UE which does not support an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

Test purpose 3

To test the behaviour of the UE which supports an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.2.2.2.4 Method of test

12.2.2.2.4.1 Test procedure1

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature GMM cause = 'IMSI unknown in HLR' Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
10	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

12.2.2.2.4.2 Test procedure2

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is

repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ATTACH COMPLETE	
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-2 signature Old Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-3 signature Old Routing area identity = RAI-1
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-4 signature Old Routing area identity = RAI-1
13	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)

Step	Direction		Message	Comments
	UE	SS		
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-5 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
18-20			(void)	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'. Stop the sequence.
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

12.2.2.2.4.3 Test procedure 3

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-2 signature Old Routing area identity = RAI-1
6	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-3 signature Old Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-4 signature Old Routing area identity = RAI-1
10	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' Old P-TMSI signature =P-TMSI-5 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
13		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
15	UE			An automatic MM IMSI attach procedure is initiated.
16	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI Steps 4917 - 5523 are only performed if the UE has performed the Registration Procedure in step 4116.
17	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19	<-		RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
26		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.2.2.5 Test requirements

Test requirements for Test porpose1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test porpose2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, 10, 12 and 16, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

Test requirements for Test porpose3

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step5, 7, 9 and 11, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

At step16, UE shall:

- perform MM location updating procedure.

At step21, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.2.2.3 Combined PS attach / PS attach while IMSI attach

12.2.2.3.1 Definition

12.2.2.3.2 Conformance requirement

If the PS UE is already attached for non-PS services by the MM specific attach procedure, but wants to perform an attach for PS services, the combined PS attach procedure is performed.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.3.3 Test purpose

To test the behaviour of the UE if PS attach performed while IMSI attached.

12.2.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I. ATT flag is set.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE is forced to register for CS services but not to PS services. The SS verifies that the UE does not respond to paging messages for PS domain. Then the UE is triggered to perform the PS attach procedure and the SS verifies that it responds to PS paging messages.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS) and configured not to perform an automatic PS attach at switch on.
2	UE			The UE is powered up or switched on. No PS attach is performed (see ICS).
3			Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-1
4	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
5	UE			No response from the UE to the request. This is checked for 10 seconds.
6	UE			The UE is triggered to perform a PS attach.
7	->		ATTACH REQUEST	Attach type = 'GPRS attach while IMSI attached' or 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' No new mobile identity assigned. TMSI and P-TMSI not included P-TMSI-2 signature Routing area identity = RAI-1
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->		RRC CONNECTION REQUEST	
11	<-		RRC CONNECTION SETUP	
12	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
14	<-		RRC CONNECTION RELEASE	
15	->		RRC CONNECTION RELEASE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
18	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.2.3.5 Test requirements

UE is already attached for non-PS service with the MM specific attach procedure.

At step5, UE shall:

- not respond to the paging message for PS domain.

At step7, when the UE is requested to attach for PS services, UE shall:

- perform the combined PS attach procedure.

At step13, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.4 Combined PS attach / rejected / IMSI invalid / illegal ME

12.2.2.4.1 Definition

12.2.2.4.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'Illegal ME'.

12.2.2.4.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1(RAI-2).
All three cells are operating in network operation mode I.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
5		<-	ATTACH REJECT	GMM cause 'Illegal ME'.
6	UE		PAGING TYPE1	Mobile identity = TMSI-1Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
9	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE			Cell C is preferred by the UE.
19	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
20		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services
21	UE			No response from the UE to the request. This is checked for 10 seconds.
22	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
24	UE			Step 25 is only performed for non-auto attach UE. A location updating procedure is initiated.
25	UE		Registration on CS	See TS34.108 Parameter Mobile identity is IMSI.
26	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
27	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
27a	<-		AUTHENTICATION AND CIPHERING REQUEST	
27b	->		AUTHENTICATION AND CIPHERING RESPONSE	
27c	SS			The SS starts integrity protection.
28	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signatureMS identity = TMSI-1 Routing area identity = RAI-2
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-2
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	UE			The UE is switched off or power is removed (see ICS).
38	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
39	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.4.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, 9 and 16, when the UE receives the paging message for CS domain, UE shall,

- not respond to the paging message for CS domain.

At step11 and 21, when the UE receives the paging message for PS domain, UE shall,

- not respond to the paging message for PS domain.

At step27, when the USIM is replaced, UE shall:

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain, UE shall,

- respond to the paging message for CS domain by sending the RAGING RESPONSE message.

12.2.2.5 Combined PS attach / rejected / PS services and non-PS services not allowed

12.2.2.5.1 Definition

12.2.2.5.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services and non-GPRS services not allowed', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services and non-GPRS services not allowed', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'GPRS services and non-GPRS services not allowed'.

12.2.2.5.4 Method of test

Initial condition

System Simulator:

- Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
  Both cells are operating in network operation mode I.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

- The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services and non-GPRS services not allowed'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'GPRS services and non-GPRS services not allowed'
6	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS Paging.
10	UE			No response from the UE to the request. This is checked for 10 seconds
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12			(void)	
13	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
15	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
16	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
17	UE			No response from the UE to the request. This is checked for 10seconds.
18	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
19	UE			The UE is powered up or switched.
20	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is IMSI.
21	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
22	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c	SS			The SS starts integrity protection.

Step	Direction		Message	Comments
	UE	SS		
23	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
24	->		ATTACH COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
26	->		RRC CONNECTION REQUEST	
27	<-		RRC CONNECTION SETUP	
28	->		RRC CONNECTION SETUP COMPLETE	
29	->		PAGING RESPONSE	Mobile identity = TMSI-1
30	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->		RRC CONNECTION RELEASE COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		SERVICE REQUEST	Service type = "paging response"
37	<-		RRC CONNECTION RELEASE	
38	->		RRC CONNECTION RELEASE COMPLETE	
39	UE			The UE is switched off or power is removed (see ICS).
40	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
41	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8 and 14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 17, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step22, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure.

At step29, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step36, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.6 Combined PS attach / rejected / PS services not allowed

12.2.2.6.1 Definition

12.2.2.6.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) A PS class AUE shall perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.6.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed'.

12.2.2.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode I.
ATT flag set to 1

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach. PS services are not possible. An UE operation mode A UE shall perform an MM IMSI attach.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on.
2a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
2b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4	<-		ATTACH REJECT	GMM cause 'GPRS services not allowed'
5	UE			An automatic MM IMSI attach procedure is initiated.
6	UE		Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-2.
7	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
8	->		RRC CONNECTION REQUEST	
9	<-		RRC CONNECTION SETUP	
10	->		RRC CONNECTION SETUP COMPLETE	
11	->		PAGING RESPONSE	Mobile identity = TMSI-2
12	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signaling link.
13	->		RRC CONNECTION RELEASE COMPLETE	
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			A location updating procedure is initiated.
17	UE		Registration on CS	See TS 34.108 Location updating type = normal. The SS allocates TMSI-1.
18	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
19	->		RRC CONNECTION REQUEST	
20	<-		RRC CONNECTION SETUP	
21	->		RRC CONNECTION SETUP COMPLETE	
22	->		PAGING RESPONSE	Mobile identity = TMSI-1
23	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
24	->		RRC CONNECTION RELEASE COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services
26	UE			No response from the UE to the request. This is checked for 10seconds.
27	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
27a	UE			If switch off is performed then UE performs IMSI detach procedure.
28	UE			The UE is powered up or switched.
28a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
28b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
29	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI
29a	<-		AUTHENTICATION AND CIPHERING REQUEST	
29b	->		AUTHENTICATION AND CIPHERING RESPONSE	
29c	SS			The SS starts integrity protection.
30	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-2 Routing area identity = RAI-2
31	->		ATTACH COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		PAGING RESPONSE	Mobile identity = TMSI-2
37	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
38	->		RRC CONNECTION RELEASE COMPLETE	
39	UE			The UE is switched off or power is removed (see ICS).
40	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
41	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, if the UE is PS class A, UE shall:

- perform the MM IMSI attach procedure.

At step11, 22 and 36, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step29, UE shall:

- perform the PS attach procedure.

12.2.2.7a Combined PS attach / rejected / location area not allowed

12.2.2.7a.1 Definition

12.2.2.7a.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

   1.4 not delete the list of "equivalent PLMNs".

   1.5 perform a cell selection.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   2.1 perform combined PS attach when a new location area is entered.

   2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.2.2.7a.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All cells are operating in network operation mode I.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		->	ATTACH REQUEST	Attach type = 'Combined GPRS/ IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3b		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
3c		<-	DETACH REQUEST	Detach type = re-attach required
3d		->	DETACH ACCEPT	
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause 'Location Area not allowed'
6	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7		<-	PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		->		No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
11a	UE			The UE performs cell selection.
12	UE			Cell B is preferred by the UE.
13	UE			No ATTACH REQUEST or LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10seconds.
17	UE			The UE initiates an attach by MMI or AT command.
18				No attach is performed by the UE. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.

Step	Direction		Message	Comments
	UE	SS		
19		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19a		UE		The UE performs cell selection
20		UE		Cell C is preferred by the UE. Step 20a and 20b are only performed by an UE which will not initiate a PS attach automatically (see ICS)
20a conditional		UE	Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
20b conditional		UE		UE initiates an attach via MMI or AT commands.
21	->		ATTACH REQUEST	Attach type = 'Combined GPRS/ IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->		RRC CONNECTION REQUEST	
26	<-		RRC CONNECTION SETUP	
27	->		RRC CONNECTION SETUP COMPLETE	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->		RRC CONNECTION RELEASE COMPLETE	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32	->		RRC CONNECTION REQUEST	
33	<-		RRC CONNECTION SETUP	
34	->		RRC CONNECTION SETUP COMPLETE	
35	->		SERVICE REQUEST	Service type = "paging response"
36	<-		RRC CONNECTION RELEASE	
37	->		RRC CONNECTION RELEASE COMPLETE	
38		UE		The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
39a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.

Step	Direction		Message	Comments
	UE	SS		
40	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
41	UE			The UE is powered up or switched on and initiates an attach (see ICS).
42				Step 43 is only performed for non-auto attach UE.
43	UE		Registration on CS	See TS 34.108
44	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
45	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6
45a	<-		AUTHENTICATION AND CIPHERING REQUEST	
45b	->		AUTHENTICATION AND CIPHERING RESPONSE	
45c	SS			The SS starts integrity protection.
46	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
47	->		ATTACH COMPLETE	
48	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
49	->		RRC CONNECTION REQUEST	
50	<-		RRC CONNECTION SETUP	
51	->		RRC CONNECTION SETUP COMPLETE	
52	->		PAGING RESPONSE	Mobile identity = TMSI-2
53	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
54	->		RRC CONNECTION RELEASE COMPLETE	
55	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
56	->		RRC CONNECTION REQUEST	
57	<-		RRC CONNECTION SETUP	
58	->		RRC CONNECTION SETUP COMPLETE	
59	->		SERVICE REQUEST	service type = "paging response"
60	<-		RRC CONNECTION RELEASE	
61	->		RRC CONNECTION RELEASE COMPLETE	
62	UE			The UE is switched off or power is removed (see ICS).
63	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
64	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.7a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Location Area not allowed', UE shall:

- not initiate MM location updating procedure.

At step8, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 16, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 18, when the UE is in the same location area, UE shall:

- not perform PS attach procedure.

At step21, when the UE enters a new location area, UE shall

- perform the combined PS attach procedure.

At step28 and 52, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35 and 59, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step45, when the UE is powered up or switched on, UE shall:

- perform the combined PS attach procedure.

12.2.2.7b Combined PS attach / rejected / No Suitable Cells In Location Area

12.2.2.7b.1 Definition

12.2.2.7b.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3 store the LA in the 'forbidden location areas for roaming'.

   1.4 not delete the list of "equivalent PLMNs".

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   2.1 search for a suitable cell in a different location area on the same PLMN.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'No Suitable Cells In Location Area'.

12.2.2.7b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN and shall perform combined PS attach procedure in that cell

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6	<-		DETACH REQUEST	Detach type = re-attach required
7	->		DETACH ACCEPT	
8		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
9	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
10	<-		ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
11		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell B.
12	UE			The UE initiates an attach automatically, by MMI or by AT command.
13	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	
16		SS		The SS starts integrity protection.
17	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
18	->		ATTACH COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

21	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.2.7b.5 Test requirements

At step4 and 9, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected sequence.

At step13, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- initiate the combined PS attach procedure.

12.2.2.7c Combined PS attach / rejected / Roaming not allowed in this location area

12.2.2.7c.1 Definition

12.2.2.7c.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Roaming not allowed in this location area' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 delete any TMSI, LAI and ciphering key sequence number.

   1.4 store the LAI in the list of "forbidden location areas for roaming".

   1.5 perform a PLMN selection.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Roaming not allowed in this location area'.

12.2.2.7c.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) , cell C in MCC1/MNC1/LAC2/RAC2 (RAI-12)
All three cells are operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or "GPRS Attach while IMSI attached" Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this location area'
6	UE			No LOCATION UPDATING REQ and ATTACH REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7		<-	PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10		->		No response from the UE to the request. This is checked for 10 seconds
11	UE			UE performs PLMN selection.
		SS		The following messages are sent and shall be received on cell B.
12		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a		<-	AUTHENTICATION AND CIPHERING REQUEST	
15b		->	AUTHENTICATION AND CIPHERING RESPONSE	
15c		SS		The SS starts integrity protection.
16		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
17		->	ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell C.
18		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19	UE			Cell C is preferred by the UE.
20	UE		Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
21	UE			UE initiates an attach automatically (see ICS) via MMI or AT commands.

Step	Direction		Message	Comments
	UE	SS		
22		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
23		->	RRC CONNECTION REQUEST	
24		<-	RRC CONNECTION SETUP	
25		->	RRC CONNECTION SETUP COMPLETE	
26		->	PAGING RESPONSE	Mobile identity = TMSI-1
27		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28		->	RRC CONNECTION RELEASE COMPLETE	
29		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
30		->	RRC CONNECTION REQUEST	
31		<-	RRC CONNECTION SETUP	
32		->	RRC CONNECTION SETUP COMPLETE	
33		->	SERVICE REQUEST	Service type = "paging response"
34		<-	RRC CONNECTION RELEASE	
35		->	RRC CONNECTION RELEASE COMPLETE	
36	UE			The UE is switched off or power is removed (see ICS).
37		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
38	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform MM IMSI attach and PS attach.

At step8, UE shall:

- not respond to paging for CS domain service.

At step10, UE shall:

- not respond to paging for PS domain service.

At step15, UE shall:

- perform PS attach procedure.

At step20, UE shall:

- perform MM IMSI attach procedure.

12.2.2.7d Combined PS attach / rejected / PS services not allowed in this PLMN

12.2.2.7d.1 Definition

12.2.2.7d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

2) If the UE is in UE operation mode A the User Equipment shall:

   2.1 perform IMSI attach for non-GPRS services by use of the MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.2.2.7d.4 Method of test

Initial condition

System Simulator:

Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2). All two cells are operating in network operation mode I.

The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE does not perform PS attach and performs an IMSI attach for non-PS services by use of the MM IMSI attach procedure when in the same cell.

After the cell is changed to equivalent PLMN, the UE shall perform PS attach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
5	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
6	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
10	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
11	<-		ATTACH REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
12	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
13		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the " Serving cell". (see note) The following messages are sent and shall be received on cell B.
14	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15	<-		AUTHENTICATION AND CIPHERING REQUEST	
16	->		AUTHENTICATION AND CIPHERING RESPONSE	
17		SS		The SS starts integrity protection.
18	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19	->		ATTACH COMPLETE	
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
22		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.2.2.7d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step4 and 9, UE shall:

- perform MM IMSI attach.

At step12, UE shall:

- not perform PS attach procedure.

At step14, UE shall:

- perform PS attach procedure.

12.2.2.8 Combined PS attach / abnormal cases / attempt counter check / miscellaneous reject causes

12.2.2.8.1 Definition

12.2.2.8.2 Conformance requirement

1) When a combined PS attach procedure is rejected with the attempt counter less than five, the User Equipment shall repeat the combined PS attach procedure after T3311 timeout.

2) When a combined PS attach procedure is rejected with the attempt counter five, the User Equipment shall delete the stored TMSI, LAI, CKSN, P-TMSI, P-TMSI signature, PS CKSN and RAI and start T3302.

3) When the T3302 expire, a new combined PS attach procedure shall be initiated.

GMM cause codes that can be selected are:
'IMSI unknown in HLR'
'MS identity cannot be derived by the network'
'Network failure'
'Congestion'
'retry upon entry into a new cell'
'Semantically incorrect message'
'Invalid mandatory information'
'Message type non-existent or not implemented'
'Message type not compatible with the protocol state'
'Information element non-existent or not implemented'
'Conditional IE error'
'Message not compatible with the protocol state'
'Protocol error, unspecified'

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.8.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.2.2.8.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No Automatic PS attach procedure at switch on or power on Yes/No

Switch off on button Yes/No

Test procedure

The UE initiates a combined PS attach procedure (attempt counter zero).

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter one) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter two) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter three) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter four) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE shall not perform a new successful attach procedure after 15 seconds.

The UE initiates a combined PS attach procedure with attempt counter zero after T3302 expires without P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 10 minutes.

T3311; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4	<-		ATTACH REJECT	Arbitrary chosen GMM cause T3302 with value 10 min.
5	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
6	SS			The SS verifies that the time between the attach reject and attach request is T3311
7	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
8	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
9	SS			The SS verifies that the time between the attach reject and attach request is T3311
10	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
11	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
12	SS			The SS verifies that the time between the attach reject and attach request is T3311
13	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
14	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
15	SS			The SS verifies that the time between the attach reject and attach request is T3311
16	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
17 (optional step)	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Location Update Procedure may be initiated from the UE. Parameter mobile identity is IMSI.
20	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-1
21	UE			No response from the UE to the request. This is checked for 10seconds.
21a			Void	
22	SS			The SS verifies that the UE does not attempt to attach for T3302 .
23	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
23a	<-		AUTHENTICATION AND CIPHERING REQUEST	
23b	->		AUTHENTICATION AND CIPHERING RESPONSE	
23c	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity P-TMSI-1 P-TMSI signature Mobile identity = TMSI-1 Routing area identity = RAI-1
25	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
26		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services..
27		->	RRC CONNECTION REQUEST	
28		<-	RRC CONNECTION SETUP	
29		->	RRC CONNECTION SETUP COMPLETE	
30		->	PAGING RESPONSE	Mobile identity = TMSI-1
31		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32		->	RRC CONNECTION RELEASE COMPLETE	
33		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
33a		->	RRC CONNECTION REQUEST	
33b		<-	RRC CONNECTION SETUP	
33c		->	RRC CONNECTION SETUP COMPLETE	
34		->	SERVICE REQUEST	Service type = "paging response"
34a		<-	RRC CONNECTION RELEASE	
34b		->	RRC CONNECTION RELEASE COMPLETE	
35	UE			The UE is switched off or power is removed (see ICS).
36		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
37	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case1) A combined PS attach procedure is rejected with the attempt counter less than five

At step 5, 8, 11 and 14, when the timer T3311 timeout has occurred, UE shall:

- repeat the combined PS attach procedure.

Case2) A combined PS attach procedure is rejected with the attempt counter five

At step21, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

Case3) The T3302 expires

At step23, UE shall:

- re-initiate the new combined PS attach procedure.

At step30, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step34, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.9 Combined PS attach / abnormal cases / PS detach procedure collision

12.2.2.9.1 Definition

12.2.2.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall ignore the combined PS detach procedure and continue with the combined PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.2.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI and RAI. UE is Idle Updated.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
Re-attach automatically when the network commands a detach with no cause value Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (any cause except re-attach). The UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (cause re-attach). The UE shall ignore the combined PS detach procedure and continue with the combined PS attach. CS services are also possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7			(void)	
8			(void)	
9	UE			The UE is attached by MMI or AT command if the UE does not re-attach automatically upon receiving a network initiated detach with no cause value, (see IXIT).
10	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11	SS			The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
12	<-		DETACH REQUEST	Detach type = 're-attach required'
13	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure
14	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-1
15	->		ATTACH COMPLETE	
16	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
17	->		RRC CONNECTION REQUEST	
18	<-		RRC CONNECTION SETUP	
19	->		RRC CONNECTION SETUP COMPLETE	
20	->		PAGING RESPONSE	Mobile identity = TMSI-2
21	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
22	->		RRC CONNECTION RELEASE COMPLETE	
23	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-2
23a	->		RRC CONNECTION REQUEST	
23b	<-		RRC CONNECTION SETUP	
23c	->		RRC CONNECTION SETUP COMPLETE	
24	->		SERVICE REQUEST	Service type = "paging response"
24a	<-		RRC CONNECTION RELEASE	
24b	->		RRC CONNECTION RELEASE COMPLETE	
25	UE			The UE is switched off or power is removed (see ICS).
26	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
27	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.2.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type described below.

Case1) Detach type is not re-attach

At step6, UE shall:

- respond to DETACH REQUEST message by sending DETACH ACCEPT message.

Case2) Detach type is re-attach

At step13, UE shall:

- ignore the PS detach procedure.

At step15, UE shall:

- send the ATTACH COMPLETE message.

At step20, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3 PS detach procedure

12.3.1 UE initiated PS detach procedure

12.3.1.1 PS detach / power off / accepted

12.3.1.1.1 Definition

12.3.1.1.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is switched off.

Reference

3GPP TS 24.008 clause 4.7.4.1

12.3.1.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set o attach to the PS services only (see ICS). If that is not supported by the UE, goto step 8.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, GPRS detach'
7a				The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
8	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 7a.

Specific message contents

None.

12.3.1.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, GPRS detach'.

12.3.1.2 PS detach / accepted

12.3.1.2.1 Definition

12.3.1.2.2 Conformance requirement

1) The GPRS detach procedure is initiated by the UE by sending a DETACH REQUEST message. The detach type information element may indicate "GPRS detach with switching off", "GPRS detach without switching off", "IMSI detach", "GPRS/IMSI detach with switching off" or "GPRS/IMSI detach without switching off".

   The UE shall include the P-TMSI in the DETACH REQUEST message. The UE shall also include a valid P-TMSI signature, if available.

2) Upon completion of the detach procedure, the used P-TMSI signature shall be deleted.

Reference

3GPP TS 24.008 clause 4.7.4.1.1

3GPP TS 24.008 clause 4.7.1.3

12.3.1.2.3 Test purpose

To test the behaviour of the UE for the detach procedure, including treatment of P-TMSI signature.

12.3.1.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
UE PS Release Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to the PS services only (see ICS). If that is not supported by the UE, goto step 18.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
5			(void)	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach"
7	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
7a	SS			The SS starts ciphering and integrity protection.
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	UE			The UE initiates an attach by MMI or AT commands
12	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
12a	SS			The SS starts ciphering and integrity protection.
13	<-		ATTACH ACCEPT	No new mobile identity assigned Attach result = 'GPRS only attached' Routing area identity = RAI-1
14	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
15	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach' Mobile identity = P-TMSI-1
16	<-		DETACH ACCEPT	
17			(void)	
18	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 16.

Specific message contents

None.

12.3.1.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and P-TMSI-1 signature.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step 12, UE shall

- initiate ATTACH REQUEST message without P-TMSI signature IE.

At step 15, UE shall:

- send the DETACH REQUEST message (without power off) to SS with mobile identity P-TMSI-1 and without P-TMSI-1 signature.

12.3.1.3 PS detach / abnormal cases / attempt counter check / procedure timeout

12.3.1.3.1 Definition

12.3.1.3.2 Conformance requirement

1) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter less than five, the User Equipment shall repeat the PS detach procedure.

2) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter five, the User Equipment shall not repeat the procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.3.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.3.1.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE initiates a PS detach procedure (attempt counter zero). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter one) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter two) after T3321expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter three) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter four) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure with attempt counter five (after T3321expires). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

At T3321 timeout in the UE, the UE then deletes the logical link since the retransmissions have been repeated four times.

The UE performs a new PS attach procedure.

T3321; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 25.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
5	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
7	SS			No response is given from the SS.
8	SS			The SS verifies that the time between the detach requests is 15 seconds
9	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
10	SS			No response is given from the SS.
11	SS			The SS verifies that the time between the detach requests is 15 seconds
12	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
13	SS			No response is given from the SS.
14	SS			The SS verifies that the time between the detach requests is 15 seconds
15	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
16	SS			No response is given from the SS.
17	SS			The SS verifies that the time between the detach requests is 15 seconds
18	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
19	SS			No response is given from the SS within 40 seconds and SS verifies that the UE will not send a DETACH REQUEST again.
20	UE			Initialte a PS attach
21	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c	SS			The SS starts integrity protection.
22	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
23				UE is switched off or power is removed (see ICS)
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
24a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
25	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 24.

Specific message contents

None.

12.3.1.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attaché procedure with the information elements specified in the above Expected Sequence.

At step9, 12, 15 and 18, when a T3321 expires with the attempt counter less than five, UE shall:

- initiate the new PS detach procedure.

At step19, when the attempt counter is greater than or equal to five, UE shall:

- not repeat the PS detach procedure.

At step20, UE shall:

- initiate the PS attaché procedure.

12.3.1.4 PS detach / abnormal cases / GMM common procedure collision

12.3.1.4.1 Definition

12.3.1.4.2 Conformance requirement

When any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off", the UE shall ignore the GMM common message.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.4.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The following test procedure is repeated for sequence counter k = 1,2,3:

The UE performs a PS attach.

The UE initiates a PS detach. The SS initiates a P-TMSI REALLOCATION COMMAND message (k=1), a GMM STATUS message (k=2) and a GMM INFORMATION message (k=3). The UE shall ignore the GMM common messages and continue with the PS detach procedure. The sending of the P-TMSI REALLOCATION COMMAND message (k = 1), the GMM STATUS message (k = 2), the GMM INFORMATION message (k = 3) and the DETACH ACCEPT message shall be completed within Timer T3321 -10%.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

The test sequence is repeated for k = 1 … 3

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, GPRS detach'
8A (k=1)	SS			The SS sends a P-TMSI REALLOCATION COMMAND message
9A (k=1)	<-		P-TMSI REALLOCATION COMMAND	
10A (k=1)	UE			The UE ignores the message. This is verified for 10 seconds.
8B (k=2)	SS			The SS sends a GMM STATUS message
9B (k=2)	<-		GMM STATUS	
10B (k=2)	UE			The UE ignores the message. This is verified for 10 seconds.
8C (k=3)	SS			The SS sends a GMM INFORMATION message
9C (k=3)	<-		GMM INFORMATION	
10C (k=3)	UE			The UE ignores the message which is verified for 10 seconds or if GMM INFORMATION message not implemented, sends a GMM STATUS with GMM Cause 'Message type non-existent or not implemented'.
11	<-		DETACH ACCEPT	The SS responds to the DETACH REQUEST
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.

Note: Steps 8x, 9x, 10x and 11 shall be completed within Timer T3321 -10%.

Specific message contents

None.

12.3.1.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step 10A, 10B, 10C and 13, when any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off, UE shall:

- ignore any of the GMM common message.

12.3.1.5 PS detach / power off / accepted / PS/IMSI detach

12.3.1.5.1 Definition

12.3.1.5.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.5.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. The UE then deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is setto attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, combined GPRS / IMSI detach'
7a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.1.5.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, combined GPRS/ IMSI detach'.

12.3.1.6 PS detach / accepted / PS/IMSI detach

12.3.1.6.1 Definition

12.3.1.6.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.6.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.6.4 Method of test

Initial condition

System Simulator:

- One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No
  User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. When the UE receives the DETACH ACCEPT, the UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates a detach (without power off) by MMI or AT command (see ICS).
6a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.6.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.1.7 PS detach / accepted / IMSI detach

12.3.1.7.1 Definition

12.3.1.7.2 Conformance requirement

The UE shall detach for CS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.7.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.7.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

- The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No
  User requested non-PS detached Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE performs an PS detach (for non-PS services).

CS services are not possible.

The UE attach for non-PS services by a routing area update procedure and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a detach for non-PS services (without power off) (see ICS).
7	->		DETACH REQUEST	Detach type = 'normal detach, IMSI detach'
8	<-		DETACH ACCEPT	
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
9a	->		RRC CONNECTION REQUEST	
9b	<-		RRC CONNECTION SETUP	
9c	->		RRC CONNECTION SETUP COMPLETE	
10	->		SERVICE REQUEST	service type = "paging response"
10a	<-		RRC CONNECTION RELEASE	
10b	->		RRC CONNECTION RELEASE COMPLETE	
11	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging order is for RRC connection.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
13	UE			The UE initiates an attach for non-PS services by a RA update procedure (see ICS).
14	->		ROUTING AREA UPDATE REQUEST	Update type = "Combined RA/LA updating with IMSI attach" Old Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated" Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
16	->		ROUTING AREA UPDATE COMPLETE	
17	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19	<-		RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).

Step	Direction		Message	Comments
	UE	SS		
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
26	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.1.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step12, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- not respond to the paging message for CS.

At step21, after the routing area updating procedure (Update type = 'Combined RA/LA updating') is completed, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.1.8 PS detach / abnormal cases / change of cell into new routing area

12.3.1.8.1 Definition

12.3.1.8.2 Conformance requirement

When a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, the UE shall abort the PS detach procedure and re-initiate it after the routing area update procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.8.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

Sufficient time is given for the UE to identify the neighbour cell before the UE is triggered to initiate a PS detach procedure. The DETACH ACCEPT message is delayed from the SS.

The UE performs a cell reselection to a cell in a new routing area and performs a routing area update procedure.

The UE shall re-initiate a PS detach procedure when the routing area update procedure is finished.

The UE deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
6a		SS		SS waits 30 sec.
7	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
8	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
9		SS		No response to the DETACH REQUEST message is given by the SS
		SS		The following messages are sent and shall be received on cell B.
10		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note) Cell B is preferred by the UE.
11	UE			The UE performs a RA update in the new cell.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE omitted
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	->		DETACH REQUEST	The detach is automatically re-attempted. Detach type = 'normal detach, combined GPRS / IMSI detach'
16	<-		DETACH ACCEPT	

NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.3.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, UE shall:

- abort a PS detach procedure.
- perform routing area updating procedure.

At step15, when the UE completes a routing area updating procedure, UE shall:

- re-initiate the PS detach procedure.

12.3.1.9 PS detach / abnormal cases / PS detach procedure collision

12.3.1.9.1 Definition

12.3.1.9.2 Conformance requirement

When a DETACH REQUEST is received by the UE while waiting for a DETACH ACCEPT message, the UE shall answer the network initiated GPRS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE initiates a PS detach. The SS does not answer the detach procedure, but initiates a detach procedure (cause re-attach not required). The UE shall continue with the network initiated detach procedure.

The UE deletes the logical link.

PS and CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A(see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, combined GPRS / IMSI detach'
8	<-		DETACH REQUEST	Detach type = 're-attach not required'
9	->		DETACH ACCEPT	The UE answers the network initiated detach.
10	<-		DETACH ACCEPT	The SS answers the UE initiated detach.
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services.
14	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives DETACH REQUEST message from SS before UE initiated GPRS detach procedure has been completed, UE shall:

- send the DETACH ACCEPT message to SS.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.2 Network initiated PS detach procedure

12.3.2.1 PS detach / re-attach not required / accepted

12.3.2.1.1 Definition

12.3.2.1.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a PS attach procedure.

The SS sends a DETACH REQUEST message to the UE. The UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The SS is set in network operation mode II.
2	UE			The UE is set to either attach to PS only or both the PS and non-PS services (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The SS initiates a PS detach.
8	<-		DETACH REQUEST	Detach type = 're-attach not required' GMM cause = 'GPRS services and non-GPRS services not allowed'
9	->		DETACH ACCEPT	
9a		SS		The SS releases the RRC connection.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.

Specific message contents

None.

12.3.2.1.5 Test requirements

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall:

- send DETACH ACCEPT message to SS.

At step11, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.3.2.2 PS detach / rejected / IMSI invalid / PS services not allowed

12.3.2.2.1 Definition

12.3.2.2.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'GPRS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network performs a PS detach procedure with the cause 'GPRS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.2.3 Test purpose

To test the behaviour of the UE if the network orders a PS detach procedure with the cause 'GPRS services not allowed' (no valid PS-subscription for the IMSI).

12.3.2.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode II.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS performs a detach with the cause value 'GPRS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause = 'GPRS services not allowed'
8	->		DETACH ACCEPT	
				The following messages are sent and shall be received on cell B.
9	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10	UE			Cell B is preferred by the UE. Step 11 is only performed for UE Operation Mode A.
11	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
12				The UE initiates an attach automatically (see ICS), by MMI or AT commands.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
15	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
15a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
16	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
16a	<-		AUTHENTICATION AND CIPHERING REQUEST	
16b	->		AUTHENTICATION AND CIPHERING RESPONSE	
16c	SS			The SS starts integrity protection.

17	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
18	->	ATTACH COMPLETE	
19	UE		The UE is switched off or power is removed (see ICS).
20	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
20a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
22	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.2.5 Test requirements

At step4 and 15, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'GPRS services not allowed') from SS, UE shall:

- send DETACH ACCEPT message.

At step13, UE shall:

- not perform PS attach procedure.

12.3.2.3 PS detach / IMSI detach / accepted

12.3.2.3.1 Definition

12.3.2.3.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.3.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE. The UE then performs an IMSI detach (detach for non-PS services).

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE attach for non-PS services by a routing area update procedure. Both PS and CS services are possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach for non-PS services.
7	<-		DETACH REQUEST	Detach type = 'IMSI detach'
8	->		DETACH ACCEPT	
9	UE			The UE initiates an attach for non-PS services (see ICS).
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-1 Routing area identity = RAI-1
12	->		ROUTING AREA UPDATE COMPLETE	
13	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
14	->		RRC CONNECTION REQUEST	
15	<-		RRC CONNECTION SETUP	
16	->		RRC CONNECTION SETUP COMPLETE	
17	->		PAGING RESPONSE	Mobile identity = TMSI-1
18	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
19	->		RRC CONNECTION RELEASE COMPLETE	
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
22	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message with Detach type = 'IMSI detach', UE shall;

- send the DETACH ACCEPT message to SS.

At step10, after the completion of the detach procedure, UE shall;

- perform combined routing area updating procedure.

At step17, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.4 PS detach / re-attach requested / accepted

12.3.2.4.1 Definition

12.3.2.4.2 Conformance requirement

When receiving the DETACH REQUEST message and the detach type IE indicates "re-attach required", the UE shall deactivate the PDP contexts and deactivate the logical link(s), if any. The UE shall then send a DETACH ACCEPT message to the network and shall change state to GMM-DEREGISTERED. The UE shall, after the completion of the GPRS detach procedure, initiate a GPRS attach procedure. The UE should also activate PDP context(s) to replace any previously active PDP contexts.

A GPRS UE operating in UE operation mode A or B in network operation mode I, which receives an DETACH REQUEST message with detach type indicating "re-attach required" or "re-attach not required" and no cause code, is only detached for GPRS services in the network.

Reference

3GPP TS 24.008 clause 4.7.4.2.2.

12.3.2.4.3 Test purpose

To test the behaviour of the UE for the detach procedure in case automatic re-attach.

12.3.2.4.4 Method of test

Initial condition

System Simulator:

One cell in operating in network operation mode I.

User Equipment:

The UE has a valid TMSI, P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE with cause re-attach. The UE then detaches for PS services. The UE automatically performs a new combined PS attach procedure with Attach Type “GPRS attach while IMSI attached” (for PS services) and PS and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity = TMSI-1 Routing area identity = RAI-1 No new P-TMSI and P-TMSI signature assigned
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach with re-attach.
7	<-		DETACH REQUEST	Detach type = 're-attach required', GMM cause omitted
8	->		DETACH ACCEPT	
9	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
10	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Mobile identity = TMSI-1 Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
11	->		ATTACH COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
12a	->		RRC CONNECTION REQUEST	
12b	<-		RRC CONNECTION SETUP	
12c	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
13a	<-		RRC CONNECTION RELEASE	
13b	->		RRC CONNECTION RELEASE COMPLETE	
14	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
15	->		RRC CONNECTION REQUEST	
16	<-		RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
18	->		PAGING RESPONSE	Mobile identity = TMSI-1
19	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives DETACH REQUEST message with Detach type = 're-attach required', UE shall;

- send DETACH ACCEPT message to SS.

At step9, after UE completed PS detach procedure with Detach type = 're-attach required', UE shall:

- initiate the combined PS attach procedure with an Attach Type of either 'Combined GPRS/IMSI attach' or ‘GPRS attach while IMSI attached’.

At step13, when the UE receives the paging message for PS domain, UE shall;

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step18, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.5 PS detach / rejected / location area not allowed

12.3.2.5.1 Definition

12.3.2.5.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete any RAI or LAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number
   .

   1.3 store the LAI in the list of the 'forbidden location areas for regional provision of service'.

   1.4 delete any TMSI, LAI and ciphering key sequence number if the UE is IMSI attached and if no RRC connection exists or if the UE is operating in UE operation mode A and an RRC connection exists when the RRC connection is subsequently released.

2) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

   2.1 perform combined PS attach when a new location area is entered.

   2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.5.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.3.2.5.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
All cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No
PS attach attempted automatically by outstanding request Yes/No

Test procedure

The SS orders a PS detach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell ". Set the cell type of cell C to the "Non-Suitable cell ". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
7		<-	DETACH REQUEST	Detach type = 're-attach not required' Cause 'Location Area not allowed'
8		->	DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22				No response from the UE to the request. This is checked for 10 seconds

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell C.
23		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 and 26 are only performed by an UE which will not initiate a PS attach automatically (see ICS)
25 conditional	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26 conditional	UE			The UE initiates an attach by MMI or AT command.
27	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6
29	->		ATTACH COMPLETE	
30	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32	<-		RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-1
35	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->		RRC CONNECTION REQUEST	
39	<-		RRC CONNECTION SETUP	
40	->		RRC CONNECTION SETUP COMPLETE	
41	->		SERVICE REQUEST	service type = "paging response"
42	<-		RRC CONNECTION RELEASE	
43	->		RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.
46	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE			The UE is powered up or switched on and initiates an attach (see ICS).

Step	Direction		Message	Comments
	UE	SS		
				Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6 TMSI status = valid TMSI available or IE not present
51	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
69	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Location Area not allowed') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.2.6 PS detach / rejected / No Suitable Cells In Location Area

12.3.2.6.1 Definition

12.3.2.6.2 Conformance requirement

1. If the network performs a PS detach procedure with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.2 store the LA in the 'forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.6.3 Test purpose

To test the behaviour of the UE if the network sends the DETACH REQUEST message with the cause 'No Suitable Cells In Location Area'.

12.3.2.6.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode I.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS sends a DETACH REQUEST message with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall not perform combined PS attach while in the same location area on the same PLMN. The SS checks that the UE shall perform PS attach when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'No Suitable Cells In Location Area'
7	->		DETACH ACCEPT	
				The following message are sent and shall be received on cell B.
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
10	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-□
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
14	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.3.2.7 PS detach / rejected / Roaming not allowed in this location area

12.3.2.7.1 Definition

12.3.2.7.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'Roaming not allowed in this location area' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the GPRS update status to GU3 ROAMING NOT ALLOWED.

   1.3 reset the attach attempt counter.

   1.4 store the LAI in the list of "forbidden location areas for roaming".

   1.5 perform a PLMN selection.

2) If the UE is IMSI attached via MM procedures, the UE shall in addition:

   2.1 delete any TMSI, LAI and ciphering key sequence number.

   2.2 reset the location update attempt counter.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.7.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause ' Roaming not allowed in this location area '.

12.3.2.7.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
All cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No

Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS orders a PS detach with the cause value ' Roaming not allowed in this location area '. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
7		<-	DETACH REQUEST	Detach type = 're-attach not required' Cause 'Roaming not allowed in this location area '
8		->	DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
14		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22				No response from the UE to the request. This is checked for 10 seconds

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell C.
23		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE			Cell C is preferred by the UE. Step 25 is only performed for non-auto attach UE.
25	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26	UE			The UE initiates an attach automatically (See ICS), by MMI or AT command.
27		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-6
29		->	ATTACH COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31		->	RRC CONNECTION REQUEST	
32		<-	RRC CONNECTION SETUP	
33		->	RRC CONNECTION SETUP COMPLETE	
34		->	PAGING RESPONSE	Mobile identity = TMSI-1
35		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36		->	RRC CONNECTION RELEASE COMPLETE	
37		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38		->	RRC CONNECTION REQUEST	
39		<-	RRC CONNECTION SETUP	
40		->	RRC CONNECTION SETUP COMPLETE	
41		->	SERVICE REQUEST	service type = "paging response"
42		<-	RRC CONNECTION RELEASE	
43		->	RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
45a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B.
46	UE			Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE			The UE is powered up or switched on and initiates an attach (see ICS). Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1

Step	Direction		Message	Comments
	UE	SS		
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-6 TMSI status = valid TMSI available or IE not present
51	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55	<-		RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62	<-		RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65	<-		RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
69	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.3.2.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = ' Roaming not allowed in this location area') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.2.8 PS detach / rejected / PS services not allowed in this PLMN

12.3.2.8.1 Definition

12.3.2.8.2 Conformance requirement

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE:

1. shall delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored, shall set the PS update status to GU3 ROAMING NOT ALLOWED (and shall store it according to section 4.1.3.2) and shall change to state GMM-DEREGISTERED.
2. shall store the PLMN identity in the "forbidden PLMNs for PS service" list.

If the network performs a PS detach procedure with the cause ' GPRS services not allowed in this PLMN ', the UE operating in UE operation mode A in network operation mode I:

1. shall set the timer T3212 to its initial value and restart it, if it is not already running.
2. is still IMSI attached for CS services in the network.

Reference(s):

3GPP TS 24.008 subclause 4.7.4.2.2

12.3.2.8.3 Test purpose

Test purpose for Test procedure1

To test the behaviour of the UE if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement1, 2).

Test purpose for Test procedure2

To test the behaviour of the UE operating in UE operation mode A in network operation mode I if the network initiates a PS detach procedure with the cause "GPRS services not allowed in this PLMN" (for Conformance requirement3, 4).

12.3.2.8.4 Method of test

12.3.2.8.4.1 Test procedure1

Initial conditions

System Simulator:

Two cells cellA in MCC1/MNC1/LAC1/RAC1, cellB in MCC1/MNC2/LAC2/RAC1.
Both two cells are operating in network operation mode II.
The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- UE operation mode C Yes/No (only if mode A not supported)..
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

Two cells are configured.

Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

The UE initiates a PS attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE does not perform a periodic ROUTING AREA UPDATE procedure in this PLMN after the timer T3312 is expired and does not respond a paging for PS services.

Cell B transmits with high power so that the UE attempts an attach procedure to cell B.

The UE initiates a PS attach procedure.

The SS verifies that the UE performs a periodic ROUTING AREA UPDATE procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A or C (see ICS).
2	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell "
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
6	->		AUTHENTICATION AND CIPHERING RESPONSE	
7	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMNs = MCC1,MNC2 T3312 = 6minutes
9	->		ATTACH COMPLETE	
10	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
11	->		DETACH ACCEPT	
12	SS			The SS releases the RRC connection.
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	UE			The SS verifies that the UE does not attempt to access the network for T3312.
				The following messages are sent and shall be received on cell B.
16	SS			Set the cell type of cell A to the "Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell " (see note)
17				Cell B is preferred by the UE. Step 18 is only performed for non-auto attach UE.
18			Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
19				The UE initiates an attach automatically (See ICS), by MMI or AT command.
20	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
21	<-		AUTHENTICATION AND CIPHERING REQUEST	
22	->		AUTHENTICATION AND CIPHERING RESPONSE	
23	SS			The SS starts integrity protection.
24	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-9 Equivalent PLMNs = MCC1,MNC1 T3312 = 6minutes
25	->		ATTACH COMPLETE	

26	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
27	->	ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-9
28	<-	ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated' Equivalent PLMNs = MCC1,MNC1
29	UE		The UE is switched off or power is removed (see ICS).
30	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off,
31	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.8.4.2 Test procedure2

Initial conditions

System Simulator:

One cell is operating in network operation mode I: MCC1/MNC1/LAC1/RAC1.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1 and RAI-1.

Related ICS/IXIT statement(s)

- Support of PS service Yes/No.
- UE operation mode A Yes/No
- Switch off on button Yes/No.
- Automatic PS attach procedure at switch on or power on Yes/No.

Test procedure

One cell is configured.

The UE initiates a combined attach procedure.

The SS sends a PS detach with the cause "GPRS services not allowed in this PLMN".

The SS verifies that the UE performs a periodic location area updating procedure after the timer T3212 is expired.

The SS verifies that the UE responds a paging for CS services.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4	<-		AUTHENTICATION AND CIPHERING REQUEST	
5	->		AUTHENTICATION AND CIPHERING RESPONSE	
6	SS			The SS starts integrity protection.
7	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
8	->		ATTACH COMPLETE	
9	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'GPRS services not allowed in this PLMN'
10	->		DETACH ACCEPT	
11				The SS releases the RRC connection
12	SS			The SS waits for the UE to expiry the timer T3212.
13	UE		Registration on CS	The UE performs a location update procedure. See TS 34.108 Mobile identity = IMSI
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
15	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16	->		PAGING RESPONSE	Mobile identity = IMSI
17				The SS releases the RRC connection
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.3.2.8.5 Test Requirement

12.3.2.8.5.1 Test Requirement for Test procedure1

At step4, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step11, when the UE receives DETACH REQUEST message with the cause "GPRS services not allowed in this PLMN", the UE shall:

- send DETACH ACCEPT message.

At step13, when the UE receives the paging for PS services with "Mobile identity = P-TMSI-2", the UE shall;

- not respond to the paging for PS services.

At step14, when the time T3312 is expired, the UE shall:

- not attempt to access the network.

At step20, when the UE enters the different cell with the equivalent PLMN, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step27, when the time T3312 is expired, the UE shall:

- initiate the periodic routing area updating procedure with the information elements specified in the above Expected Sequence.

12.3.2.8.5.2 Test Requirement for Test procedure2

At step3, when the UE is powered up or switched on, the UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives DETACH REQUEST message with cause "GPRS services not allowed in this PLMN ", the UE shall:

- send DETACH ACCEPT message.

At step12, while the SS wait for the timer T3312 to expire, the UE shall:

- not perform the periodic location area updating procedure.

At step13, when the T3212 timer is expired, the UE shall:

- initiate the periodic location area updating procedure.

At step16, when the UE receives the paging for CS services with "Mobile identity = IMSI", the UE shall;

- respond to the paging for CS services by sending the PAGING RESPONSE message.

12.4 Routing area updating procedure

This procedure is used to update the actual routing area of an UE in the network.

12.4.1 Normal routing area updating

The routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A or C that are IMSI attached for PS services only.

12.4.1.1a Routing area updating / accepted

12.4.1.1a.1 Definition

12.4.1.1a.2 Conformance requirement

1) If the network accepts the routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

2) If the network accepts the routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

3) The routing area updating procedure shall also be used by a UE which is attached for PS services if a new PLMN is entered.

Reference

3GPP TS 24.008 clause 4.7.5, 4.7.5.1.

12.4.1.1a.3 Test purpose

To test the behaviour of the UE if the network accepts the routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.

2) Old P-TMSI / P-TMSI signature is not changed.

To test the behaviour of the UE if the UE enters the new PLMN.

12.4.1.1a.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).
All three cells are operating in network operation mode II.
The PLMN contains cell C is equivalent to the PLMN that contains cell A.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in all cells.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.

2) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the P-TMSI.

3) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 32.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Equivalent PLMN: MCC = 2, MNC = 1
6	->		ATTACH COMPLETE	
6a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7a		SS		The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signatureOld P-TMSI signature= Routing area identOld ity = RAI-1
8a		SS		The SS starts integrity protection.
9	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1

Step	Direction		Message	Comments
	UE	SS		
10	->		ROUTING AREA UPDATE COMPLETE	
11			Void	
11b			Void	
11c	SS			The SS releases the RRC connection.
11d	<-		PAGING TYPE1	Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = Paging order is for PS services.
11e	SS			SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.
14	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
15	UE			Cell A is preferred by the UE.
15a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
16a	SS			The SS starts integrity protection.
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-1 signature Routing area identity = RAI-1 Equivalent PLMN: MCC = 2, MNC = 1
17a	SS			The SS releases the RRC connection.
18	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".
18a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call"
18b			Void	
18c			Void	
19	->		SERVICE REQUEST	service type = "paging response"
19aa	SS			The SS starts integrity protection.
19a	SS			The SS releases the RRC connection.
				The following messages are sent and shall be received on cell C.
20	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
21	UE			Cell C is preferred by the UE.
21a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
22	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
23	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1

Step	Direction		Message	Comments
	UE	SS		
24		SS		The SS starts integrity protection.
25	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
26	->		ROUTING AREA UPDATE COMPLETE	
27	SS			The SS releases the RRC connection.
28	UE			The UE is switched off or power is removed (see ICS).
29	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
30	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
31	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
32	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 31.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.1a.5 Test requirements

At step 3a, 7a, 15a and 22 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 18a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 29 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step13, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- not respond to the paging message for PS domain.

At step16, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step19, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step23, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

12.4.1.1b Routing area updating / accepted / Signalling connection re-establishment

12.4.1.1b.1 Definition

12.4.1.1b.2 Conformance requirement

When the UE receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", then the UE shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not.

Reference

3GPP TS 24.008 clause 4.7.2.5, 4.7.5.1

12.4.1.1b.3 Test purpose

To test the behaviour of the UE if the UE receives a RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment".

12.4.1.1b.4 Method of test

Initial condition

System Simulator:

One cell(Cell A) in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode II. ATT flag is set to 0.

User Equipment:

The UE has a valid TMSI, P-TMSI-1 and RAI-1

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.

b) After the Service request procedure is complete, the SS sends the RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment" to the UE.

c) After the UE release the RRC connection, the UE initiate immediately a normal routing area update procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = ' GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
10	SS			The SS starts integrity protection.
11	SS			The SS releases the RRC connection, using Release cause=Directed Signalling Connection Re-establishment
12			Void	
13	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Call re-establishment".
14			Void	
15			Void	
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' (FOR bit not checked) Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
21	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.4.1.1b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, UE shall;

- initiate the routing area updating procedure whether the routing area has been changed since the last update or not.

12.4.1.1c Void

12.4.1.2 Routing area updating / rejected / IMSI invalid / illegal ME

12.4.1.2.1 Definition

12.4.1.2.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Illegal ME'.

12.4.1.2.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II (in case of UE operation mode A)
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a			Void	
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Illegal ME'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.
12	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the “Non-Suitable cell”. Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
16	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
16a				Step 16b is only performed by UE in operation mode A

16b	UE	Registration on CS	See TS 34.108 Parameter mobile identity is IMSI.
17	->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
17a	<-	AUTHENTICATION AND CIPHERING REQUEST	
17b	->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS		The SS starts integrity protection.
18	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'Illegal ME', UE shall;

- not respond to the paging message for PS domain.

At step14, UE shall,

- not initiate PS attach procedure.

At step17, after the UE is powered up or USIM is replaced, UE shall;

- initiate the PS attach procedure.

12.4.1.3 Routing area updating / rejected / UE identity cannot be derived by the network

12.4.1.3.1 Definition

12.4.1.3.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'MS identity cannot be derived by the network', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Depending on the manufacturer the UE may or may not perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'MS identity cannot be derived by the network'.

12.4.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Automatic attach procedure when UE identity cannot be derived by the network Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal routing area updating with the cause value 'MS identity cannot be derived by the network'. The UE detach locally. A new PS attach may be performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity =P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'MS identity cannot be derived by the network'
11	UE			If an automatic attach procedure by the UE is not possible when the UE identity cannot be derived by the network (see ICS) goto step 19.
12	UE			An Automatic PS attach procedure is initiated (see ICS).
13		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
13a		<-	AUTHENTICATION AND CIPHERING REQUEST	
13b		->	AUTHENTICATION AND CIPHERING RESPONSE	
13c		SS		The SS starts integrity protection.
14		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
15		->	ATTACH COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
18		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Step	Direction		Message	Comments
	UE	SS		
19	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
20	UE			No response from the UE to the request, as the UE has detached locally. This is checked for 10 seconds.
NOTE: The definitions for "Non-Suitable cell", Suitable neighbour cell and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the implementation of the UE.

Case 1) UE supports an Automatic PS attach procedure.

At step13, UE shall;

- initiate the PS attach procedure.

Case 2) UE does not support an Automatic PS attach procedure.

At step20, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.4.1.4a Routing area updating / rejected / location area not allowed

12.4.1.4a.1 Definition

12.4.1.4a.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature and TMSI, LAI and ciphering key sequence number.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

   1.4 not delete the list of "equivalent PLMNs".

   1.5 perform a cell selection.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment:

   2.1 may perform routing area update when a new location area is entered.

2.2 shall delete the list of forbidden LAs after switch off (power off).

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4a.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.4.1.4a.4 Method of test

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) , cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell D in MCC2/MNC1/LAC2/RAC1(RAI-6).
All four cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

The PLMN contains Cell D is equivalent to the PLMN that contains Cell C.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell C.
1		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 33.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell C is preferred by the UE.
3a			Void	
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
6	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
8		SS		Cell B is preferred by the UE.
8a				The following step is only performed for UE Operation Mode A.
8b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signatureOld P-TMSI signature= Routing area identOld ity = RAI-3
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Location Area not allowed'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
		SS		The following messages are sent and shall be received on cell A.
13		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
13a	UE			The UE performs cell selection.
14	UE			Cell A is preferred by the UE.
15	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)

Step	Direction		Message	Comments
	UE	SS		
16		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16a	UE			The UE performs cell selection.
17	UE			Cell D is preferred by the UE. The following messages are sent and shall be received on cell D.
17a				The following step is only performed for UE Operation Mode A.
17b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20		->	ATTACH COMPLETE	
21	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
22		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-3
24a		<-	AUTHENTICATION AND CIPHERING REQUEST	
24b		->	AUTHENTICATION AND CIPHERING RESPONSE	
24c		SS		The SS starts integrity protection.
25		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
26		->	ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell A.
27				Set the cell type of cell A to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
28				Cell A is preferred by the UE.
28a				The following step is only performed for UE Operation Mode A.
28b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
29		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-3

Step	Direction		Message	Comments
	UE	SS		
30	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
31	UE			The UE is switched off or power is removed (see ICS).
32	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
32a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
33	SS			The SS is set in network operation mode II.
34	UE			The UE is set in UE operation mode A (see ICS), cell A is switched off and the test is repeated from step 3 to step 32.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12 and 15, when in the same location area, UE shall

- not perform PS attach procedure.

At step18, when a new location area is entered, UE shall

- perform the PS attach procedure.

At step24, when the USIM is replaced , UE shall;

- perform the PS attach procedure.

At step29, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

12.4.1.4b Routing area updating / rejected / No Suitable Cells In Location Area

12.4.1.4b.1 Definition

12.4.1.4b.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 store the LA identity in the 'forbidden location areas for roaming'.

1.2 search for a suitable cell in a different location area on the same PLMN.

1.3 not delete equivalent PLMNs list.

1.4 not delete the MM and GMM contexts

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4b.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.1.4b.4 Method of test

Initial condition

System Simulator:

Four cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4),

All four cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

The PLMNs of cells A, B, C and D are all equivalent.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

ii) Cell D will be mapped to Cell 3 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform Routing Area Update procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 Mobile identity = P-TMSI-1
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area' The following message are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 Mobile identity = P-TMSI-1 The UE shall initiate a location area updating procedure between steps 8 and 12.
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
11	->		ROUTING AREA UPDATE COMPLETE	
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

13	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.1.4b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall;

- initiate the routing area updating procedure.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

12.4.1.4c.1 Definition

12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- shall set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for PS service" list.
- not delete the equivalent PLMN list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

   UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

   UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

   UE shall be still IMSI attached for CS services in the network.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.1.4c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

The UE is in UE operation mode C.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure 1

The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Serving cell". (see note)
13	UE			The UE performs PLMN selection.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
17		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
17a		<-	AUTHENTICATION AND CIPHERING REQUEST	
17b		->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS			The SS starts integrity protection.

18	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

Test procedure2

Initial condition

System Simulator:

One cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I.

T3212 is set to 6 minutes.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout. The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The UE sets the timer T3212 to its initial value and restart it, if it is not already running.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
5b	SS			The SS verifies that the time between the attach and the periodic RA updating is T3312
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
7	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
8	UE		Registration on CS	See TS 34.108 Location Update Procedure is initiated from the UE when T3212 is expired.
9	->		void	
10	<-		void	
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removDetach type – ‘power switched off, IMSI detach’ed.
13	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4c.5 Test requirements

Test requirement for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;

- not respond to the paging message for PS domain.

At step13, UE shall,

- initiate PLMN selection.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step7, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step8, UE shall,

- initiate the periodic location area updating procedure when the timer T3212 is expired.

12.4.1.4d Routing area updating / rejected / Roaming not allowed in this location area

12.4.1.4d.1 Definition

12.4.1.4d.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1 shall not perform PS attach when in the same location area.

   1.2 shall store the LA in the 'forbidden location areas for roaming'.

   1.3 shall perform a routing area updating when entering into a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current status is different from "IDLE NO IMSI".

2) The User Equipment shall erase the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

References

3GPP TS 24.008 clause 4.7.5.1.4.

3GPP TS 23.122 clause 4.5.2.

3GPP TS 24.008 clause 4.4.1.

12.4.1.4d.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this location area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.1.4d.4 Method of test

12.4.1.4d.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. A new attempt for a PS attach is not possible. Successful PS attach procedure is performed in another location area. The UE is moved back to the 1st location area. A routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
20			Void	

Step	Direction		Message	Comments
	UE	SS		
21	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-2
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
23	->		ROUTING AREA UPDATE COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		SS		The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36		SS		The SS releases the RRC connection.
37			Void	
				The following messages are sent and shall be received on cell B.
38		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
39		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
40	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
41		UE		No response from the UE to the request. This is checked for 10 seconds.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

12.4.1.4d.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No

USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a PS attach is possible on the cell on which the previous routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
20	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.

Step	Direction		Message	Comments
	UE	SS		
21	->		ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =P-TMSI-2
22a	<-		AUTHENTICATION AND CIPHERING REQUEST	
22b	->		AUTHENTICATION AND CIPHERING RESPONSE	
22c		SS		The SS starts integrity protection.
22	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 MS identity = TMSI-1
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		SS		The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36		SS		The SS releases the RRC connection.
37			Void	
38	UE			The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
40		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4d.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence

At step12, when the SS rejects the routing area update procedure with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the routing area update procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step41, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the PS attach procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.1.5 Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes

12.4.1.5.1 Definition

12.4.1.5.2 Conformance requirement

When a routing area updating procedure is rejected with the attempt counter less than five, the UE shall repeat the routing area updating procedure after T3311 timeout.

When a T3311 timeout has occurred during a routing area updating procedure with the attempt counter five, the UE shall start timer T3302.

When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.5.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.1.5.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). The ATT-flag shall indicate that the MS should use IMSI attach/detach procedures.
Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure (attempt counter zero).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter one) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter two) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter three) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter four) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure with attempt counter five (after T3311 expires).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE shall not perform a new successful routing area updating procedure after T3311 seconds.

The UE initiates a routing area updating procedure with attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; set to 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2a			Void	
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-2 signature Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
10		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
12	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
13		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1

Step	Direction		Message	Comments
	UE	SS		
18	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
19	SS			The SS verifies that the time between the routing area updating requests is 15 seconds
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
21	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
22	SS			The SS verifies that the UE does not attempt to attach for 10 minutes .
23	SS			The SS shall release the PS signalling connection.
23a			Void	
24	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
25	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-4
26	->		ROUTING AREA UPDATE COMPLETE	
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach' An IMSI Detach must be performed for an UE in Operation Mode A either before or after the PS Detach
29	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- perform the routing area updating procedure.

UE shall perform the following actions depending on the conditions described below.

Case 1) At step11, 14, 17 and 20, a routing area updating procedure is rejected from SS with the attempt counter less than five,

UE shall:

- repeat the routing area updating procedure after T3311 timeout

Case2) At step22 a routing area updating procedure is rejected from SS with the attempt counter five

At step22, UE shall:

- not initiate a routing area updating procedure.

Case3) At step24, the T3302 expires

UE shall:

- initiate the new routing area updating procedure

12.4.1.6 Routing area updating / abnormal cases / change of cell into new routing area

12.4.1.6.1 Definition

12.4.1.6.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.6.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.6.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C In MCC1/MNC1/LAC1/RAC3 (RAI-5).
All cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 18.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
6		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
10		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
				The following messages are sent and shall be received on cell C.
11		SS		Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
12		SS		Cell C is preferred by the UE.
13		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
14		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-5
15		->	ROUTING AREA UPDATE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

17a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
18 19	SS UE		The SS is set in network operation mode II. The UE is set in UE operation mode A (see ICS). Set the cell type of cell C to the "Non-Suitable cell".The test is repeated from step 2 to step 17.
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.1.6.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure.

At step13, when change of cell into a new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

12.4.1.7 Void

12.4.1.8 Routing area updating / abnormal cases / P-TMSI reallocation procedure collision

12.4.1.8.1 Definition

12.4.1.8.2 Conformance requirement

When a P-TMSI REALLOCATION COMMAND message is received by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.8.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a P-TMSI reallocation procedure. The UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'GPRS only attached' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1
10	<-		P-TMSI REALLOCATION COMMAND	Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
11	UE			The UE ignores the P-TMSI reallocation command.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure.

At step11, when a P-TMSI REALLOCATION COMMAND message is received from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the P-TMSI reallocation procedure.
- continue with the routing area updating procedure.

12.4.2 Combined routing area updating

The combined routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A that are IMSI attached for PS and non-PS services. In order to use the combined routing area updating procedure, the network must operate in network operation mode I.

12.4.2.1 Combined routing area updating / combined RA/LA accepted

12.4.2.1.1 Definition

12.4.2.1.2 Conformance requirement

1) If the network accepts the combined routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
2) If the network accepts the combined routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the combined routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.
2) Old P-TMSI / P-TMSI signature is not changed.
3) Mobile terminating CS call is allowed with IMSI.
4) Mobile terminating CS call is allowed with TMSI.

12.4.2.1.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

1) A combined PS attach procedure is performed. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI, unassigns the TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI and IMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used

2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

3) A combined PS attach procedure is performed. The UE sends an ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI and with a new TMSI. The UE acknowledge the new TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE-SS is performed by the old P-TMSI. For CS calls, the new TMSI is used.

4) The UE is CS paged in order to verify that the TMSI is used for CS calls.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
6a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".

Step	Direction		Message	Comments
	UE	SS		
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
9	->		ROUTING AREA UPDATE COMPLETE	
9a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
10b			Void	
10c			Void	
11	->		SERVICE REQUEST	service type = "paging response"
11aa		SS		The SS starts integrity protection.
11a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
11b			Void	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services. Paging cause = "Terminating conversational call"
13		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
14			Void	
15			Void	
16	->		PAGING RESPONSE	Mobile identity = IMSI
17		SS		The SS releases the RRC connection.
18			Void	
				The following messages are sent and shall be received on cell A.
19		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' No P-TMSI P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
22	->		ROUTING AREA UPDATE COMPLETE	
23	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call".

Step	Direction		Message	Comments
	UE	SS		
23a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
23b			Void	
23c			Void	
24	->		SERVICE REQUEST	service type = "paging response"
24aa		SS		The SS starts integrity protection.
24a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
24b			Void	
25	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
26		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
27			Void	
28			Void	
29	->		PAGING RESPONSE	Mobile identity = TMSI-1
30		SS		The SS releases the RRC connection.
31			Void	
32	UE			The UE is switched off or power is removed (see ICS).
32a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
34		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step16, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step20, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step22, UE shall:

- acknowledge the new TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step29, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.4.2.2 Combined routing area updating / UE in CS operation at change of RA

12.4.2.2.1 Definition

12.4.2.2.2 Conformance requirement

PS UE in UE operation mode A that is in an ongoing CS transaction at change of routing area shall initiate the normal routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.1

12.4.2.2.3 Test purpose

To test the behaviour of the UE if the routing area is changed during an ongoing circuit switched transmission.

12.4.2.2.4 Method of test

Initial condition

System Simulator:

One cell, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) is operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A combined PS attach procedure is performed. SS Initiates a CS call with UE in UE Operation Mode A. The routing area change. The UE will perform the normal routing area updating procedure during the ongoing circuit-switched transaction.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				Set the cell type of cell A to the "Serving cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	SS			A CS call is initiated.
7			Void	
8			Void	
8a	<-		UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code.
8b	->		UTRAN MOBILITY INFORMATION CONFIRM	
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9a	SS			The SS starts integrity protection.
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
11	->		ROUTING AREA UPDATE COMPLETE	
11a	SS			The SS releases the PS signalling connection, but keeps the RRC connection.
12	<-		PAGING TYPE2	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	->		SERVICE REQUEST	service type = "paging response"
13a	SS			The SS starts integrity protection.
13b	SS			The SS releases the CS call.
14	SS			The SS initiates the RRC connection release.
14a	->		ROUTING AREA UPDATE REQUEST	Update type = “combined RA/LA updating” or "combined RA/LA updating with IMSI Attach", Old P-TMSI signature=P-TMSI-1 signature, Old Routing area identity = RAI-4, TMSI status = no valid TMSI available
14b	SS			The SS starts integrity protection.
14c	<-		ROUTING AREA UPDATE ACCEPT	Update result = "combined RA/LA updated", No P-TMSI, P-TMSI-3 signature, Routing area identity = RAI-1
15	UE			The UE is switched off or power is removed (see ICS).

15a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
16	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
17	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

UTRAN MOBILITY INFORMATION (step 8a)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	30
- ATT	1
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	0 (Network Mode of Operation I)
- CN domain specific DRX cycle length coefficient	7

12.4.2.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE has received the new RAI from the SS in the UTRAN MOBILITY INFORMATION message, the UE shall:

- initiate the normal routing area updating procedure.

12.4.2.3 Combined routing area updating / RA only accepted

12.4.2.3.1 Definition

12.4.2.3.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.3.3 Test purpose

Test porpose1

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'IMSI unknown in HLR'.

Test porpose2

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.4.2.3.4 Method of test

Test Procedure1

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message. The SS allocates a P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'IMSI unknown in HLR'
9	->		ROUTING AREA UPDATE COMPLETE	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10a	->		RRC CONNECTION REQUEST	
10b	<-		RRC CONNECTION SETUP	
10c	->		RRC CONNECTION SETUP COMPLETE	
11	->		SERVICE REQUEST	service type = "paging response"
11a	<-		RRC CONNECTION RELEASE	
11b	->		RRC CONNECTION RELEASE COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
13	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Test Procedure2

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I. T3212 is set to 6 minutes.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Automatic MM IMSI attach procedure for UE operation mode A UE Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message . The SS allocates a new P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. This procedure is repeated until the routing area updating attempt counter is equal to five. An UE operation mode A UE may perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity. It is further verified that the UE after a successful IMSI attach procedure can perform CS services.

Expected Sequence

Dependent whether the option 'Automatic MM IMSI attach procedure for UE operation mode A UE' is not supported or not, the steps 1-13 or 14-35 apply depending on manufacturer (see ICS).

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
1a		UE		The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.

Step	Direction		Message	Comments
	UE	SS		
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE COMPLETE	
10				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
13	->		ROUTING AREA UPDATE COMPLETE	
14				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
16	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
17	->		ROUTING AREA UPDATE COMPLETE	
18				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311

Step	Direction		Message	Comments
	UE	SS		
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
20	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
21	->		ROUTING AREA UPDATE COMPLETE	
22				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
23	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
24	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
25	->		ROUTING AREA UPDATE COMPLETE	
26				The routing area updating attempt counter =5. The combined routing area updating procedure is reinitialised at the expiry of T3311
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach' Stop the sequence.
28a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
				The following messages are sent and shall be received on cell B
29	UE			The UE is set in UE operation mode A and automatic MM IMSI attach procedure is indicated (see ICS).
30	UE			The UE is powered up or switched on and initiates an attach (see ICS).
31	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
31a	<-		AUTHENTICATION AND CIPHERING REQUEST	
31b	->		AUTHENTICATION AND CIPHERING RESPONSE	
31c	SS			The SS starts integrity protection.
32	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-4

Step	Direction		Message	Comments
	UE	SS		
33	->		ATTACH COMPLETE	
34	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell ". (see note)
35	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-4 TMSI status = no valid TMSI available
36	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
37	->		ROUTING AREA UPDATE COMPLETE	
38				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
39	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
40	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
41	->		ROUTING AREA UPDATE COMPLETE	
42				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
43	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
44	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
45	->		ROUTING AREA UPDATE COMPLETE	
46				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
47	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
48	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
49	->		ROUTING AREA UPDATE COMPLETE	
50				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
51	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
52	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
53	->		ROUTING AREA UPDATE COMPLETE	
54				The routing area updating attempt counter =5.
55	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI-1. Steps 56 - 62 are only performed if the UE has performed the Registration Procedure in step 55.
56	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
57	->		RRC CONNECTION REQUEST	
58	<-		RRC CONNECTION SETUP	
59	->		RRC CONNECTION SETUP COMPLETE	
60	->		PAGING RESPONSE	Mobile identity = TMSI-1
61	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
62	->		RRC CONNECTION RELEASE COMPLETE	
63	UE			The UE is switched off or power is removed (see ICS).
64	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
65	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.3.5 Test requirements

Test requirements for Test Procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step9, UE shall:

- acknowledge the new P-TMSI by sending the ROUTING AREA UPDATE COMPLETE message.

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step13, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test Procedure2

At step3 and 31, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step6 and 35, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step11, 15, 19 and 23, UE shall:

- re-initiate the combined routing area updating procedure.

At step39, 43, 47 and 51, UE shall:

- re-initiate the combined routing area updating procedure.

At step55, UE shall:

- perform MM location updating procedure.

At step60, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.4.2.3a Void

12.4.2.4 Combined routing area updating / rejected / PLMN not allowed

12.4.2.4.1 Definition

12.4.2.4.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

   1.1 not perform combined GPRS attach when switched on in the same location area or PLMN, except when the PLMN identity is equal to the HPLMN.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature, TMSI CKSN and LAI.

1.3 store the PLMN in the 'forbidden PLMN list', except when the PLMN identity is equal to the HPLMN.

2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 3.1.

12.4.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined routing area updating procedure of the UE with the cause 'PLMN not allowed'.

12.4.2.4.4 Method of test

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC2 (RAI-10), cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2) and cell E in MCC1/MNC3/LAC1/RAC1 (RAI-11).

The PLMN containing Cell E is equivalent to the PLMN that contains Cell A.
All four cells are operating in network operation mode I

The HPLMN is different from MCC1/MNC2.

Sintrasearch and Sintersearch values for cells A, B, D and E are 20 dB.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell E will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No
PS attach attempted automatically by outstanding request	Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same PLMN. The SS checks that the UE does not perform IMSI attach if activated in the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-8 P-TMSI Signature = P-TMSI-8 signature Routing area identity = RAI-8 MS identity = TMSI-1 Equivalent PLMN: MCC = 1, MNC=3
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B and cell E.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". Set the cell type of cell E to the "Suitable neighbour cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating'Old P-TMSI Signature= P-TMSI-8 signature Old Routing area identity = RAI-8 Valid TMSI is available. TMSI status = valid TMSI available or IE not present Mobile identity = P-TMSI-8
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PLMN not allowed'
10a		SS		The SS releases the RRC connection.
10b				Cell E is preferred by the UE Step 11 and 11a are only performed by an UE which will not initiate a PS attach automatically (see ICS)
11 conditional	UE		Registration on CS	See TS 34.108 Location Update Procedure is initiated from the UE.
11a conditional				The UE initiates an attach by MMI or by AT command.

Step	Direction		Message	Comments
	UE	SS		
12		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12a	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' or 'GPRS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
13	<-		AUTHENTICATION AND CIPHERING REQUEST	
14	->		AUTHENTICATION AND CIPHERING RESPONSE	
14a		SS		The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-11 P-TMSI Signature = P-TMSI-11 signature Routing area identity = RAI-11 MS identity = TMSI-2 Equivalent PLMN: MCC = 1, MNC=2
16	->		ATTACH COMPLETE	
17		SS		The SS releases the RRC connection.
18	<-		PAGING TYPE1	Paging is sent on cell A. Mobile identity= P-TMSI-11 P-TMSI-11 signature Paging order for PS services
18a				The UE shall not initiate an RRC connection. This is checked during 3 seconds.
19	<-		PAGING TYPE1	Paging is sent on cell B. Mobile identity = TMSI-2 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21			Void	
22			Void	
23			Void	
24			Void	
25			Void	
26			Void	
27		SS		The following messages are sent and shall be received on cell D. Set the cell type of cell B and E to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
28	UE			Cell D is preferred by the UE.
28a			Void	
29			Void	
29a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
30	->		ROUTING AREA UPDATE REQUEST	Update type = 'combined RA/LA updating' Old P-TMSI Signature= P-TMSI-11 signature Old Routing area identity = RAI-11 TMSI status = valid TMSI available or IE not present
30a		SS		The SS starts integrity protection.
31	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'combined RA/LA updated ' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2

Step	Direction		Message	Comments
	UE	SS		
32	->		ROUTING AREA UPDATE COMPLETE	
33	UE			The UE is switched off or power is removed (see ICS).
34	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
35	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall initiate a PS attach procedure to cell E.

At step18, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step19, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the combined routing area update procedure.

12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area

12.4.2.5a.1 Definition

12.4.2.5a.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1 shall not perform combined PS attach when in the same location area.

   1.2 shall store the LA in the 'forbidden location areas for roaming'.

   1.3 shall perform a routing area update when entering in a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of

service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current update status is different from "IDLE NO IMSI".

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

3GPP TS 23.122 clause 4.5.2.

12.4.2.5a.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this location area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful combined routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.2.5a.4 Method of test

12.4.2.5a.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this location area'. A new attempt for a combined PS attach is not possible. Successful combined routing area updating procedure is performed in another location area. The UE is moved back to the 1st location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
9a		SS		SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
18a			Void	
19			Void	

Step	Direction		Message	Comments
	UE	SS		
19a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' or 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2 MS identity = TMSI-1
22	->		ROUTING AREA UPDATE COMPLETE	
22a		SS		The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a		SS		The SS starts integrity protection.
28		SS		The SS releases the RRC connection
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating background call"
30a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o		SS		The SS starts integrity protection.
31a		SS		The SS releases the RRC connection.
31b			Void	
				The following messages are sent and shall be received on cell B.
32		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
33		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
34	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
35		UE		No response from the UE to the request. This is checked for 10 seconds.

NOTE: The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

12.4.2.5a.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this location area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
2a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2 Mobile identiy = P-TMSI-2
9a		SS		The SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
10a		SS		The SS releases the RRC connection.
11			Void	
12			Void	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
17a		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
18	UE			The UE gets the USIM replaced, is powered up or switched on.

Step	Direction		Message	Comments
	UE	SS		
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
19	UE			The UE initiates an attach (see ICS) by MMI or AT command.
19a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =P-TMSI_2 TMSI status = valid TMSI available or IE not present
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 MS identity = TMSI-1
22	->		ATTACH COMPLETE	
22a	SS			The SS releases the RRC connection.
23	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging cause = "Terminating conversational call"
24	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating conversational call".
25			Void	
26			Void	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
27a	SS			The SS starts integrity protection.
28	SS			The SS releases the RRC connection.
29			Void	
30	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging cause = "Terminating background call"
30a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating background call".
30b			Void	
30c			Void	
31	->		SERVICE REQUEST	service type = "paging response"
31o	SS			The SS starts integrity protection.
31a	SS			The SS releases the RRC connection.
31b			Void	
32	UE			The UE is switched off or power is removed (see ICS).
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
34	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.5a.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence

At step12, when the SS rejects the combined routing area update procedure with GMM cause = 'Roaming not allowed in this location area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined RA/LA updating procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step35, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.2.5b Combined routing area updating / rejected / No Suitable Cells In Location Area.

12.4.2.5b.1 Definition

12.4.2.5b.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 store the LA or the PLMN identity in the 'forbidden location areas for roaming'.

   1.2 search for a suitable cell in a different location area on the same PLMN.

2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5b.3 Test purpose

To test the behaviour of the UE if the network rejects a combined routing area updating procedure of the UE with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.2.5b.4 Method of test

Initial condition

System Simulator:

Five cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell E in MCC1/MNC2/LAC1/RAC1 (RAI-5).

All five cells are operating in network operation mode I.

The PLMN contains Cell A, B and D is equivalent to the PLMN that contains Cell E.

Sintrasearch and Sintersearch values for cells A, B, D and E are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell D will be mapped to Cell 3 as found in TS 34.108 clause 6.1.4.2.

iii) Cell E will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall performa combined routing area update procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". Set the cell type of cell E to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4 MS identity = IMSI Equivalent PLMN: MCC = 1, MNC=2
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Non-Suitable cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
8a		SS		The SS releases the RRC connection. The following message are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = P-TMSI-1
10	<-		ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updating with IMSI attach' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMN: MCC = 1, MNC=2
11	->		ROUTING AREA UPDATE COMPLETE	
11a		SS		The SS releases the RRC connection.

12	SS		Set the cell type of cell D to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell E to the "Suitable neighbour cell". (note) The SS deactivates Cell B and activates Cell D and Cell E The SS configures power level of each Cell as follows. Cell D > Cell E
13			Cell D is preferred by the UE.
14	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
15	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
15a	SS		The SS releases the RRC connection.
16			The following message are sent and shall be received on cell E.
17	->	ROUTING AREA UPDATE REQUEST	Attach type = 'Combined RA/LA updating with IMSI attach' Mobile identity = IMSI
18	<-	ROUTING AREA UPDATE ACCEPT	Attach result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature Routing area identity = RAI-5 Equivalent PLMN: MCC=1. MNC=2
19	->	ROUTING AREA UPDATE COMPLETE	
20	SS		The SS releases the RRC connection.
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell", "Serving cell" and "Non-Suitable cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.2.5b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure.

At step 8, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the combined routing area update procedure.

At step 15, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step 17, when the UE enters a suitable cell in a different but equivalent PLMN (MCC=1, MNC=2), UE shall:

- perform the combined routing area update procedure.

12.4.2.5c Combined routing area updating / rejected / Location area not allowed

12.4.2.5c.1 Definition

12.4.2.5c.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'Location area not allowed', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete any TMSI, LAI and ciphering key sequence number.
- store the LAI in the list of "forbidden location areas for regional provision of service"
- not delete the list of "equivalent PLMNs".
- perform a cell selection.

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.2.5c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Location area not allowed'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2	SS			The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 MS identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5a	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = Location area not allowed '
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	UE			The UE performs cell selection.
				The following messages are sent and shall be received on cell C.
15	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
16	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 MS identity = TMSI-2 Equivalent PLMNs = MCC1,MNC1
17	->		ATTACH COMPLETE	

18	UE		The UE is switched off or power is removed (see ICS).
19	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
20	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5c.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined GPRS/IMSI attached' to the equivalent cell.

12.4.2.5d Combined routing area updating / rejected / PS services not allowed in this PLMN

12.4.2.5d.1 Definition

12.4.2.5d.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for GPRS service" list.
- not delete the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.2.5d.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.2.

ii) Cell C will be mapped to Cell 7 as found in TS 34.108 clause 6.1.4.2.

User Equipment:

The UE has a valid IMSI.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-8
9	<-		ROUTING AREA UPDATE REJECT	GMM cause ='GPRS services not allowed in this PLMN'
10	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
				The following messages are sent and shall be received on cell C.
14	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
15	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 MS identity = TMSI-2 Equivalent PLMNs = MCC1,MNC1
16	->		ATTACH COMPLETE	

17 18	UE ->	 DETACH REQUEST	The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
19	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5d.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined GPRS/IMSI attached' to the equivalent cell.

12.4.2.6 Combined routing area updating / abnormal cases / access barred due to access class control

12.4.2.6.1 Definition

12.4.2.6.2 Conformance requirement

1) The UE shall not perform combined routing area updating procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the combined routing area updating procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (cell is changed).

12.4.2.6.4 Method of test

12.4.2.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred on Cell B.

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has Access Class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has Access Class x barred.
Both cells are operating in network operation mode I.

User Equipment:

The UE has valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

The SS indicates that access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The access class x is not barred anymore.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
15		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell B.

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x not barred.
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a		<-	AUTHENTICATION AND CIPHERING REQUEST	
3b		->	AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
9		SS		Set the cell type of cell B to the "Suitable neighbour cell ". Set the cell type of cell C to the "Serving cell". (see note)
10	UE			Cell C is preferred by the UE.
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
12		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-4
13		->	ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.6.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred , UE shall:

- not perform the combined routing area updating procedure.

At step10, when the access class x is not barred, UE shall:

- perform the combined routing area updating procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred UE shall:

- not perform the combined routing area updating procedure.

At step11, when the serving cell is changed, UE shall:

- perform the combined routing area updating procedure.

12.4.2.7 Combined routing area updating / abnormal cases / attempt counter check / procedure timeout

12.4.2.7.1 Definition

12.4.2.7.2 Conformance requirement

1) When a T3330 timeout has occurred during a routing area updating procedure, the UE shall repeat the routing area updating procedure after T3330 timeout until the procedure is repeated five times.

2) When a routing area updating procedure is repeated five times, the routing area updating attempt counter is incremented and five more routing area updating procedures are performed. This procedure is repeated until the routing area updating attempt counter is five, the UE shall then start timer T3302.

3) When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.7.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.2.7.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure (routing area updating attempt counter zero). The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter one) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter two) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter three) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter four) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and as the routing area updating attempt counter is five. T3302 is started.

The UE may perform a Location Update procedure.

The UE initiates a routing area updating procedure with routing area updating attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; 15 seconds.

T3330; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE. K = 1.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k (k is not visible. It is only used for clarifying the sequence.) Retransmission counter = 0
9		SS		No response is given from the SS.
10		SS		The SS verifies that the time between the RA update requests is T3330seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 1
12		SS		No response is given from the SS.
13		SS		The SS verifies that the time between the RA update requests is T3330seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 2
15		SS		No response is given from the SS.
16		SS		The SS verifies that the time between the RA update requests is T3330seconds

Step	Direction		Message	Comments
	UE	SS		
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 3
18	SS			No response is given from the SS.
19	SS			The SS verifies that the time between the RA update requests is T3330seconds
20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 4
21	SS			No response is given from the SS.
22	SS			The SS verifies that the time between the RA update requests is T3311 + T3330 seconds.
23	SS			Step 8 – 22 is repeated four times with k = 2, k = 3, k = 4 and k = 5
23a optional	UE		Registration on CS	The UE may perform a normal location updating procedure. See TS 34.108
24	SS			The SS verifies that the time between the RA update requests is T3302 + T3330 seconds
25	->		ROUTING AREA UPDATE REQUEST	Update type = - 'combined RA/LA updating with IMSI attach' (If Step23a is performed) - 'combined RA/LA updating' (If Step23a is not performed) Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
26	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
27	->		ROUTING AREA UPDATE COMPLETE	
28	UE			The UE is switched off or power is removed (see ICS).
29	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
30	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case 1) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter less than five

At step11, 14, 17 and 20, UE shall:

- repeat the combined routing area updating procedure after the timer T3330 timeout

Case2) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter five

At step 22, UE shall:

- not repeat the combined routing area updating procedure.

Case 3) A timer T3311 timeout has occurred and the Routing area attempt counter is less than five,

At step23, UE shall:

- repeat the combined routing area updating procedure

Case 4) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter five and the Retransmission counter five.

At step24, UE shall:

- not initiate a routing area updating procedure.

Case5) The timer T3302 expires

At step25, UE shall:

- initiate the new routing area updating procedure

12.4.2.8 Combined routing area updating / abnormal cases / change of cell into new routing area

12.4.2.8.1 Definition

12.4.2.8.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.8.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC3 (RAI-5).
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area. The UE shall not increment the attempt counter.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		No response id given from the SS.
				The following messages are sent and shall be received on cell C.
10		SS		Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11	UE			The RF level of cell B is lowered, and the RF level of cell C is increased, until cell C is preferred by the UE.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-5
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'

17	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure.

At step12, when change of cell into new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.
- re-initiate new routing area updating procedure in the new routing area.

12.4.2.9 Void

12.4.2.10 Combined routing area updating / abnormal cases / PS detach procedure collision

12.4.2.10.1 Definition

12.4.2.10.2 Conformance requirement

1) When a detach request is received with cause 'GPRS detach' or 'combined GPRS/IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

2) When a detach request is received with cause 'IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the detach request and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.10.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.10.4 Method of test

12.4.2.10.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'GPRS detach' or 'combined GPRS/IMSI detach'. The UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach not required'
11	->		DETACH ACCEPT	
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.10.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid P-TMSI and RAI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'IMSI detach'. The UE shall ignore the detach procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 MS identity = IMSI
5	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 'IMSI detach'
11	UE			The UE ignores the DETACH REQUEST message and continue the routing area updating procedure.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = IMSI Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
16		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.2.10.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, when the UE receives a DETACH REQUEST message with cause 'GPRS detach' or 'combined GPRS/IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- terminate the routing area updating procedure
- continue with the PS detach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, the UE receives a DETACH REQUEST message with cause 'IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the detach request procedure.
- continue with the routing area updating procedure.

12.4.3 Periodic routing area updating

12.4.3.1 Periodic routing area updating / accepted

12.4.3.1.1 Definition

12.4.3.1.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.1.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 11.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
5b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
7		SS		The SS verifies that the time between the attach and the periodic RA updating is T3312
7a		SS		The SS starts integrity protection.
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
8a		SS		The SS releases the RRC connection.
9	UE			The UE is switched off or power is removed (see ICS).
9a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
10	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
10a		SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
11				The SS is set in network operation mode II.
12	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 10.

Specific message contents

None.

12.4.3.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.2 Periodic routing area updating / accepted / T3312 default value

12.4.3.2.1 Definition

12.4.3.2.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.2.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. After 54 minutes, a periodic routing area updating procedure is initiated by the UE.

T3312; default value 54 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c	SS			The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 T3312 = 54 min
4	->		ATTACH COMPLETE	
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present.
6	SS			The SS verifies that the time between the attach request and the periodic RA updating is T3312
7	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/IMSI detach'
10	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

None.

12.4.3.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step5, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.3 Periodic routing area updating / no cell available / network mode I

12.4.3.3.1 Definition

12.4.3.3.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode I, then the UE shall perform a combined routing area update procedure indicating 'combined RA/LA updating with IMSI attach'.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.3.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.3.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Cell A is operating in network operation mode II and cell B is in network operation mode I.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a routing area updating procedure is performed immediately.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2		SS		The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
6	->		ATTACH COMPLETE	
7		SS		After 5 minutes, the signal strength is lowered until the UE has lost contact with the SS. Set the cell type of cell A to the "non-suitable cell".(see note)
8		SS		Wait 2 minutes.
				The following messages are sent and shall be received on cell B.
9		SS		Set the cell type of cell B to the "Serving cell". (see note)
10	UE			Cell B is preferred by the UE.
11	UE			The UE immediately starts a combined RA updating procedure
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted.
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Allocated P-TMSI = P-TMSI-3 P-TMSI Signature = P-TMSI-3 signature MS identity = TMSI-2 Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS/ IMSI detach'
17		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.3.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE is both IMSI attached for PS and non-PS service , and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell that supports PS and the network is in network oration mode I, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

12.4.3.4 Periodic routing area updating / no cell available

12.4.3.4.1 Definition

12.4.3.4.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode II, then the UE shall perform a periodic routing area update procedure and a periodic location update procedure.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.4.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Idle updated on Cell A

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a periodic routing area updating procedure is performed immediately (no periodic location update procedure is performed as T3212=infinity).

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
1a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
2	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
2a	<-		AUTHENTICATION AND CIPHERING REQUEST	
2b	->		AUTHENTICATION AND CIPHERING RESPONSE	
2c	SS			The SS starts integrity protection.
3	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
4	->		ATTACH COMPLETE	
5-12			(void)	
13	SS			After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
14	SS			After 2 minutes, the signal strength is increased until the UE have got contact with the SS.
15	UE			The UE immediately start the periodic RA updating procedure
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
18	UE			The UE is switched off or power is removed (see ICS).
18a			IMSI DETACH INDICATION	Message not sent if power is removed This is applicable only for UE in UE operation mode A.
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
20	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific message contents

RRC System information block type 1

Information element	Comment Value
T3212 (Periodical Location updating)	Infinity

12.4.3.4.5 Test requirements

At step2, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, when the UE is both IMSI attached for PS and non-PS service, and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell in the same RA that supports PS and that indicates that the network is in network operation mode II, UE shall:

- perform the periodic routing area updating procedure indicating "Periodic updating".

12.5 P-TMSI reallocation

12.5.1 Definition

12.5.2 Conformance requirement

1) A User Equipment shall acknowledge a new P-TMSI when explicitly allocated.

2) The P-TMSI shall be updated on the USIM when the User Equipment is correctly deactivated in accordance with the manufacturer's instructions.

3) A User Equipment shall use the given P-TMSI in further communication with the network.

Reference

3GPP TS 24.008 clause 4.7.6.

12.5.3 Test purpose

To verify that the UE is able to receive and acknowledge a new P-TMSI by means of an explicit P-TMSI reallocation procedure.

To verify that the UE has stored the P-TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in the attach procedure.

12.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No (only if mode A not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An explicit P-TMSI reallocation procedure is performed (P-TMSI reallocation command sent from the SS and acknowledged from the UE by P-TMSI reallocation complete). The UE is PS detached and switched off. Its power

supply is interrupted for 10 seconds. The power supply is resumed and then the UE is switched on. A PS attach procedure is performed with the given P-TMSI as identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		P-TMSI REALLOCATION COMMAND	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
7	->		P-TMSI REALLOCATION COMPLETE	
8	UE			The UE is switched off or power is removed (see ICS).
8a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
9a	SS			If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
10	UE			Ensure the power is removed from the UE for at least 10 seconds
11	UE			The UE is powered up or switched on and initiates an attach (see ICS).
11a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-1
12a	<-		AUTHENTICATION AND CIPHERING REQUEST	
12b	->		AUTHENTICATION AND CIPHERING RESPONSE	
12c	SS			The SS starts integrity protection.
13	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'GPRS only attached' P-TMSI-3 signature Routing area identity = RAI-1
13a	SS			The SS releases the RRC connection and waits 5s to allow the UE to read system information.
14	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause = "Terminating interactive call".

15	SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
16		Void	
17		Void	
18	->	SERVICE REQUEST	service type = "paging response"
18a	SS		The SS starts integrity protection.
19	SS		The SS releases the RRC connection.
20		Void	
21	UE		The UE is switched off or power is removed (see ICS).
21a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
22	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
23	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .

Specific message contents

None.

12.5.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE receives P-TMSI REALLOCATION COMMAND message from SS, UE shall:

- acknowledge the new P-TMSI by sending P-TMSI REALLOCATION COMPLETE message.

At step12, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step18, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.6 PS authentication

12.6.1 Test of authentication

The purpose of this procedure is to verify the user identity. A correct response is essential to guarantee the establishment of the connection. If not, the connection will drop.

12.6.1.1 Authentication accepted

12.6.1.1.1 Definition

12.6.1.1.2 Conformance requirement

A User Equipment shall correctly respond in an authentication and ciphering procedure by sending a response with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the authentication and ciphering procedure.

12.6.1.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A) in both cells.

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The SS checks the value RES sent by the UE in the AUTHENTICATION AND CIPHERING RESPONSE message.

The UE initiates a routing area updating procedure and the SS checks the value of the PS Ciphering Key Sequence Number sent by the UE in the ROUTING AREA REQUEST message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7		SS		The SS checks the RES value and starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
9	->		ATTACH COMPLETE	
9a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
10		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
12		SS		The value of PS-CKSN is checked. Integrity protection is started.
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
16a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)

18	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 16a.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.1.5 Test requirements

At steps 3a and 10a the UE shall transmit an RRC CONNECTION REQUEST message with the IE "Establishment cause" set to "Registration".

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message form SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

At step11, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.2 Authentication rejected by the network

12.6.1.2.1 Definition

12.6.1.2.2 Conformance requirement

Upon receipt of an AUTHENTICATION AND CIPHERING REJECT message, the UE shall set the PS update status to GU3 ROAMING NOT ALLOWED and shall delete the P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number stored.

The USIM shall be considered as invalid until switching off or the USIM is removed.

If the AUTHENTICATION AND CIPHERING REJECT message is received, the UE shall abort any GMM procedure, shall stop the timers T3310 and T3330 (if running) and shall enter state GMM-DEREGISTERED.

Reference

3GPP TS 24.008 clauses 4.7.7.5.

12.6.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the authentication and ciphering procedure.

12.6.1.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The test sequence is repeated for K = 1, 2.

A complete PS attach procedure is performed. The SS rejects the following authentication and ciphering procedure. The UE is paged with its IMSI and shall not respond.
The Cell is changed into a new Routing Area.

The SS checks that the UE does not perform normal routing area updating.

The SS then checks that the UE does not perform a PS detach.

The SS checks that the UE does not perform a PS Attach procedure.

Expected Sequence

The test sequence is repeated for k = 1, 2

For k =1, the UE is set in UE operation mode C. If MS operation mode C not supported then k = 2.

For k = 2 the UE is set in UE operation mode A.

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a			Void	
2b		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4			Void	
5			Void	
6		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
7		->	AUTHENTICATION AND CIPHERING RESPONSE	RES
8		<-	AUTHENTICATION AND CIPHERING REJECT	
8a		SS		The SS releases the RRC connection and waits 5s to allow the UE to read system information.
9		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell B.
11		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12	UE			Cell B is preferred by the MS.
13	UE			No ROUTING AREA UPDATE REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			The UE is switched off (see ICS).
17	SS			No DETACH REQUEST sent to the SS (SS waits 30 seconds).
18				The UE is powered up or switched on and initiates an attach (see ICS). Step 19 is only performed for k =2
19	UE		Registration on CS	Parameter mobile identity is IMSI See TS 34.108
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
20a		<-	AUTHENTICATION AND CIPHERING REQUEST	
20b		->	AUTHENTICATION AND CIPHERING RESPONSE	
20c		SS		The SS starts integrity protection.
21		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4

22	->	ATTACH COMPLETE	
22a	SS		The SS releases the RRC connection.
23	UE		The UE is switched off or power is removed. (see ICS)
23a	SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
24	->	DETACH REQUEST	Message not sent if power is removed.
24a	SS		If the power was not removed, the SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off .
25	UE		If k=1 then the test is repeated for k=2.
NOTE: The definitions for "Non-Suitable celll" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.2.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REJECT message, UE shall:

- not respond paging message for PS domain.

At step13, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- not perform normal routing area updating.

At step17, when the UE is switched off, UE shall:

- not perform PS detach procedure.

12.6.1.3 Authentication rejected by the UE

12.6.1.3.1 GMM cause 'MAC failure'

12.6.1.3.1.1 Definition

12.6.1.3.1.2 Conformance requirement

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'MAC failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.1.3 Test purpose

To test the behaviors of the UE, when the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid.

12.6.1.3.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

The MAC (Message Authentication Code) code, which is included in AUTHENTICATION AND CIPHERING REQUEST, is invalid value.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'MAC failure' to the SS.

The SS initiates an identification procedure, upon receipt of a failure message with reject cause 'MAC failure'.

After the identification procedure is complete, the SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 25.
3	UE			
4				The following messages are sent and shall be received on cell A.
5	UE			The UE is powered up or switched on and initiates an attach (see ICS).
5a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
6	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
7	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Invalid Message Authentication Code (MAC).
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
9a	<-		IDENTITY REQUEST	Identity type = IMSI
9b	->		IDENTITY RESPONSE	Mobile identity = IMSI
10	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CSKN-1
11	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
12		SS		The SS checks the RES value and starts integrity protection.
13			Void	
14			Void	
15			Void	
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a		SS		The SS releases the RRC connection.
				The following messages are sent and shall be received on cell B.
18		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
18a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
20		SS		The SS checks the value of PS-CKSN and starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
22	->		ROUTING AREA UPDATE COMPLETE	
23	UE			The UE is switched off or power is removed (see ICS).

24	->	DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
24a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
25	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 24.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.3.1.5 Test requirements

At step6, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST with Invalid Message Authentication Code, UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS

At step11, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message (containing a valid MAC) from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step9b, when the UE receives the IDENTITY REQUEST message with Identity type = IMSI from SS, UE shall:

- send the IDENTITY RESPONSE message with Mobile identity = IMSI to SS.

12.6.1.3.2 GMM cause 'Synch failure'

12.6.1.3.2.1 Definition

12.6.1.3.2.2 Conformance requirement

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'Synch failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.2.3 Test purpose

To test the behaviors of the UE, when the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range.

12.6.1.3.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'synch failure' to the SS.

SS re-initiates an authentication and ciphering procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note 1)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 21.
3	UE			The following messages are sent and shall be received on cell A. The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. SQN is out of range.
6			Void	
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause = 'Synch failure' AUTS parameter
8		SS		set new authentication vectors. (re-synchronisation)
9	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CKSN-1
10	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
11		SS		The SS checks the RES value and starts integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
13a	SS			The SS releases the RRC connection.
14	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note 1)
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1 PS-CKSN-1
16	SS			The SS checks the value of PS-CKSN and starts integrity protection
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
20a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
21	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 20.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.6.1.3.2.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step7, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message(SQN is out of range.), UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS

At step9, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step15, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.3.3 Authentication rejected by the UE / fraudulent network

12.6.1.3.3.1 Definition

12.6.1.3.3.2 Conformance requirement

R99 and REL-4:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occur:

   - After sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;

   - Upon receipt of the second AUTHENTICATION & CIPHERING REQUEST message from the network while the T3318 is running and the MAC value cannot be resolved.

   When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP 24.008 clause 4.7.7.6.1.

2. In addition to the cases specified in subclause 4.7.7.6, the UE may deem that the network has failed the authentication check after any combination of three consecutive authentication failures, regardless whether 'MAC failure', 'invalid SQN', or 'GSM authentication unacceptable' was diagnosed. The authentication failures shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the UE, while the timer T3318 or T3320 started after the previous authentication failure is running.

   If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 04.18).

Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

REL-5 and later releases:

1. It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occurs:

   - after sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;

   - the MS detects any combination of the authentication failures: "MAC failure", "invalid SQN", and "GSM authentication unacceptable", during three consecutive authentication challenges. The authentication challenges shall be considered as consecutive only, if the authentication challenges causing the second and third authentication failure are received by the MS, while the timer T3318 or T3320 started after the previous authentication failure is running.

   When it has been deemed by the MS that the source of the authentication challenge is not genuine (authentication not accepted by the MS), the MS shall behave as described in 3GPP TS 24.008 subclause 4.7.7.6.1.

2. If the UE deems that the network has failed the authentication check, then it shall request RR or RRC to release the RR connection and the PS signalling connection, if any, and bar the active cell or cells (see 3GPP TS 25.331 and 3GPP TS 44.018).

Reference

3GPP TS 24.008 clause 4.7.7.6 (f) and 4.7.7.6.1.

12.6.1.3.3.3 Test purpose

R99 and REL-4

To test UE treating a cell as barred:

1. when the network sends the second or third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

REL-5 or later release:

To test UE treating a cell as barred:

1. when the network sends the third AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.
2. when the timer T3318 has expired.

12.6.1.3.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1(RAI-1), cell B in MCC1/MNC1/LAC1/RAC2(RAI-2).
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

Two cells are configured. Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

During the attach procedure, the SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS repeats a second time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

For R99 and REL-4: SS waits 30 seconds. If the UE sends an AUTHENTICATION AND CIPHERING FAILURE message during this time then the the SS repeats the authentication procedure a third time and then waits 30 seconds. The UE moves into idle mode and do not make any access attempt on Cell A.

For REL-5 or later relaese: The SS repeats a third time the authentication procedure, again with an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message. The UE moves into idle mode and do not make any access attempt on Cell A.

The UE shall attempt to attach to cell B. The SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST

message. The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS waits for T3318 to expire.

The UE shall treat now both cells as barred and shall not attempt to access the network, even if the user triggers the UE to perform an attach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
				The following messages are sent and shall be received on cell A.
2	UE			The UE is powered up or switched on and initiates an attach procedure.
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
4	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
5	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure' R99 and REL-4: In case message is not received within 30s then SS should continue from step 9.
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC). R99 and REL-4: Optional step
7b			Void	
8		SS		SS verifies that the UE does not attempt to access the network for 30s. R99 and REL-4: Optional step
9		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
				UE shall attempt an attach on cell B. The following messages are sent and shall be received on cell B.
10	UE			The UE initiates an attach by MMI or AT command.
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobility identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
13	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
14		SS		SS waits T3318 (20s)
15		SS		SS verifies that the UE does not attempt to access the network for 30s.
16	UE			The UE initiates an attach by MMI or AT command.
17		SS		SS verifies that the UE does not attempt to access the network for 30s.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.6.1.3.3.5 Test requirements

At step3, when the UE is powered on or switched on, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step4, when the UE have received the first AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

For R99 and REL-4 UE:

Alternative 1:

- After step 6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

Alternative 2:

- After step6, when the UE have received the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and

- After step 7a , when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

For REL-5 UE:

- After step 6, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) from the network while the timer T3318 is running, the UE shall send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS; and

- After step 7a, when the UE have received the third AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall not attempt to access the network.

At step 11, when the activated cell is changed from cell A to cell B, the UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

After step 12, when the UE have received the AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), the UE shall:

- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step 17, when the timer T3318 have expired, the UE shall:

- not attempt to access the network.

12.6.2 Void

12.7 Identification procedure

The purpose of this procedure is to check that the UE gives its identity as requested by the network. If this procedure does not work, it will not be possible for the network to rely on the identity claimed by the UE.

12.7.1 General Identification

12.7.1.1 Definition

12.7.1.2 Conformance requirement

1) When requested by the network the User Equipment shall send its IMSI.

2) When requested by the network the User Equipment shall send its IMEI as stored in the Mobile Equipment.

3) When requested by the network the User Equipment shall send its IMEISV as stored in the Mobile Equipment.

Reference

3GPP TS 24.008 clauses 4.7.8

12.7.1.3 Test purpose

To verify that the UE sends identity information as requested by the system. The following identities can be requested: IMSI, IMEI and IMEISV.

12.7.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE (to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI.

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS requests identity information from the UE:

- IMSI
- IMEI
- IMEISV

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 14.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4			Void	
5	<-		AUTHENTICATION AND CIPHERING REQUEST	
5a	->		AUTHENTICATION AND CIPHERING RESPONSE	
5b		SS		The SS starts ciphering and integrity protection.
6	<-		IDENTITY REQUEST	Identity type = IMSI
7	->		IDENTITY RESPONSE	Mobile identity = IMSI
8	<-		IDENTITY REQUEST	Identity type = IMEI
9	->		IDENTITY RESPONSE	Mobile identity = IMEI
10	<-		IDENTITY REQUEST	Identity type = IMEISV
11	->		IDENTITY RESPONSE	Mobile identity = IMEISV
11a	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
11b	->		ATTACH COMPLETE	
11c		SS		The SS releases the RRC connection.
12	UE			The UE is switched off or power is removed (see ICS).
12a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not received if power is removed).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
13a		SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
14	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 13a.

Specific message contents

None.

12.7.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 12a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

At step9, when the SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

At step11, when the SS requests an IMEISV with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEISV.

12.8 GMM READY timer handling

12.8.1 Definition

12.8.2 Conformance requirement

If a READY timer value is received by an UE capable of both UMTS and GSM in the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, then the received value shall be stored by the UE in order to be used at an intersystem change from UMTS to GSM.

Reference

3GPP TS 24.008 clause 4.7.2.1

12.8.3 Test purpose

To verify that READY timer value received in UTRA can be used in GSM.

12.8.4 Method of test

12.8.4.1 Test procedure

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A (UTRAN) in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B (GSM) in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Cell B is in neigbour cell list of cell A.
Both cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in cell A (UTRAN).
The value of ATT flag in SIB3 IE “Control Channel Description” is set to value “0” in cell B (GSM).

In SIB3 and SIB4 the IE “$S_{searchRAT}$”, is set to value “20dB” in cell A (UTRAN).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

UE supports both GSM/GPRS and UTRAN Radio Access Technologies Yes/No
UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs Yes/No

UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

An attach is performed.

T3314; set to 60 seconds

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Cell B is switched off. (see note)
2	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C. The UE is powered up or switched on and initiates an attach (see ICS).
2a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 T3314 = 60 seconds T3312=6 minutes
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell".Set the cell type of cell B to the "Serving cell".
7	UE			UE establish cell reselection to GSM system
				The following messages are received on Cell B (GERAN)
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
10	->		ROUTING AREA UPDATE COMPLETE	
11		SS		The SS verifies that the time between the end of Step 10 and the periodic RA updating is Ready Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Mobile identity=P-TMSI-1 Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-4
13	<-		ROUTING AREA UPDATE ACCEPT	Update type = 'RA updated'
14	UE			UE is swithed off or power is removed (see ICS)
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'

NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.8.5 Test requirements

At step4, when the UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

At step12, UE shall establish periodic Routing Area Update after Timer Period (T3314) + Periodic Routing Area Updating timer (T3312) (+/- 10%).

12.9 Service Request procedure (UMTS Only)

12.9.1 Service Request Initiated by UE Procedure

12.9.1.1 Definition

12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

12.9.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE in PMM-IDLE state sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receives the SERVICE REQUEST message, the SS performs authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
6a	SS			The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9	->		Void	
9a	SS			The SS releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a			Void	
11			Void	
11a			Void	
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

12.9.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE has any signalling message (e.g. for SM or SMS) that requires security protection, the UE shall:

- send the SERVICE REQUEST message with service type indicated "signalling".

12.9.2 Service Request Initiated by Network Procedure

12.9.2.1 Definition

12.9.2.2 Conformance requirement

When the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall send the SERVICE REQUEST message to the network.

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.2

12.9.2.3 Test purpose

To test the behavior of the UE if the UE receives the paging request for PS domain service from the network.

12.9.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE ~~(~~to prevent repeated CS domain registration and/or IMSI Detach by UEs in operation mode A).

User Equipment:

The UE has a valid IMSI

The UE has been registered in the CS domain.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE is in PMM-IDLE state. The SS pages the UE by sending a Paging message to the UE.

b) The UE sends a SERVICE REQUEST message to the SS. Service Type specifies Paging Response. The Service Request is carried over the radio in an RRC Direct Transfer message.

c) After the SS receives the SERVICE REQUEST message from the UE, SS initiates an authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set to attach to PS services only (see ICS). If that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched in and initiates an attach (see ICS).
2a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call"
6a	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7	->		SERVICE REQUEST	Service type = "Paging response"
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
9a	SS			SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
10a	SS			SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	UE			The UE is set to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11a.

Specific message contents

None.

12.9.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating interactive Call".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step 7, when the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall:

- send the SERVICE REQUEST message with service type indicated "paging response".

12.9.3 Service Request / rejected / Illegal MS

12.9.3.1 Definition

12.9.3.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Illegal MS", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and enter state GMM DEREGISTRATED. A UE operating in MS operation A shall in addition to set the update status to U3 ROAMING NOT ALLOWED.

2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. A UE operating in MS operation A shall in addition delete any TMSI, LAI and ciphering key sequence number.

3) consider the USIM as invalid for PS service until switched off or the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.3.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Illegal MS".

12.9.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1, RAI-1 and IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #3(Illegal MS).

c) After the UE receives the SERVICE REJECT message with the cause value #3(Illegal MS), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the power of the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "Illegal MS"
9a	SS			The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
14b	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
17a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "Illegal MS"
20a		SS		The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
23	UE			If possible (see ICS) USIM replacement is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed
24	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c		SS		The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "Illegal MS"
32			VOID	
33			VOID	
34		SS		The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

None.

12.9.3.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.4 Service Request / rejected / PS services not allowed

12.9.41 Definition

12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "GPRS services not allowed", the UE shall:

1) set the GPRS update state to GU3 ROAMING NOT ALLOWED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
3) consider the USIM as invalid for PS service until the UE is switched off or until the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.4.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "GPRS services not allowed in this PLMN".

12.9.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #7(GPRS services not allowed).

c) After the UE receives the SERVICE REJECT message with the cause value #7(GPRS services not allowed), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2		SS		The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Old P-TMSI signature=Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9a		SS		The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11		SS		The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c		SS		The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)

Step	Direction		Message	Comments
	UE	SS		
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
20a	SS			The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
23	UE			The UE gets the USIM replaced, is powered up or switched on.
24			Void	
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
32			VOID	
33			VOID	
34	SS			The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

12.9.4.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.5 Service Request / rejected / MS identity cannot be derived by the network

12.9.5.1 Definition

12.9.5.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "MS identity cannot be derived by the network", the UE shall:

1) set the GPRS update states to GU2 NOT UPDATED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
3) initiate the PS attach procedure automatically.

Reference

TS 24.008 clauses 4.7.13.4

12.9.5.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "MS identity cannot be derived by the network".

12.9.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #9 (MS identity cannot be derived by the network).

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 23.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "MS identity cannot be derived by the network"
9a	SS			The SS releases the RRC connection
10	UE			The UE automatically initiates the PS attach procedure.
10a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts ciphering and integrity protection.
12	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature
13	->		ATTACH COMPLETE	
13a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
14	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
15	->		SERVICE REQUEST	Service type = "signalling"
16	<-		SERVICE REJECT	Reject cause = “GPRS services not allowed”
17			VOID	
18			VOID	.
19	SS			The SS releases RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
21			Void	

22		Void	
23	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 22.

Specific message contents

None.

12.9.5.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "MS identity cannot be derived by the network" UE shall:

- initiate PS attach procedure automatically.

12.9.6 Service Request / rejected / PLMN not allowed

12.9.6.1 Definition

12.9.6.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PLMN not allowed", the UE shall:

1) delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.
2) set the GPRS update status to GU3 ROAMING NOT ALLOWED.
3) store the PLMN identity in the appropriate forbidden list.

Reference

TS 24.008 clauses 4.7.13.4

12.9.6.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PLMN not allowed".

12.9.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN).
All two cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in both cells.

NB: i) Cell B will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #11 (PLMN not allowed).

c) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

d) The SS checks that the UE does not answer a Page from the SS until the power of the UE is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 24.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PLMN not allowed"
9a	SS			The SS releases the RRC connection
10	UE			The UE stores the PLMN identity in the "forbidden PLMN list".
11	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
12	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30second)
13	<-		PAGING TYPE1	Paging order is for PS service
14	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages shall be sent and shall be received on cell B.
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
16	UE			Cell B is preferred by the UE.
16a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
17a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI

18a	<-	AUTHENTICATION CIPHERING REQUEST	AND	
18b	->	AUTHENTICATION CIPHERING RESPONSE	AND	
18c	SS			The SS starts ciphering and integrity protection.
19	<-	ATTACH ACCEPT		Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'GPRS only attached'
20	->	ATTACH COMPLETE		
21	UE			The UE is switched off or power is removed (see ICS).
22	->	DETACH REQUEST		Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
23	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
24	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 23.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.9.6.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the SERVICE REJECT message with cause "PLMN not allowed", UE shall:

- not perform a PS attach procedure in the same PLMN.

At step13, when the UE receives the paging message for PS domain UE shall:

- not respond to the paging message for PS domain.

At step18, UE shall:

- perform PS attach procedure.

12.9.7a Service Request / rejected / No PDP context activated

12.9.7a.1 Definition

12.9.7a.2 Conformance requirement

If the network rejects a service request procedure with the cause "No PDP context activated":

- The UE shall deactivate locally all active PDP contexts and the UE shall enter the state GMM-REGISTERED.NORMAL-SERVICE. The UE may also activate PDP context(s) to replace any previously active PDP contexts.

NOTE: In some cases, user interaction may be required and then the UE cannot activate the PDP context(s) automatically.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No PDP context activated".

12.9.7a.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Method of context activation

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #40 (No PDP context activated).

c) After the UE receives the SERVICE REJECT message, the UE shall deactivate locally all active PDP contexts.

d) If the UE not automatically activates the PDP context (to replace the previously active PDP context) then a PS call is initiated by MMI or by AT command. The UE shall send a SERVICE REQUEST with Service type = "signalling".

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1				The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 26.
2				The SS is set in network operation mode II and activates cell A.
3				The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	
6	->		ATTACH COMPLETE	
6a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		AUTHENTICATION AND CIPHERING REQUEST	
10	->		AUTHENTICATION AND CIPHERING RESPONSE	
11	SS			The SS initiates a security mode control procedure.
12	UE			After a PS call is established, the UE suspends transmission of the user data.
13	SS			The SS initiates a Radio Bearer release procedure.
14	UE			The UE resumes the transmission of the user data.
15	->		SERVICE REQUEST	Service type = "data"
16	<-		SERVICE REJECT	Reject cause = "No PDP context activated"
17	UE			The UE shall deactivate locally all active PDP contexts.
17a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates a PS call, automatically, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		AUTHENTICATION AND CIPHERING REQUEST	
21	->		AUTHENTICATION AND CIPHERING RESPONSE	
21	SS			SS initiates a security procedure by sending SECURITY MODE COMMAND message.
22	UE			The UE is switched off or power is removed (see ICS).
23	UE			The UE initiates Detach request, by MMI or by AT command.
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
25	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

26	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25.

Specific message contents

None.

12.9.7a.5 Test requirements

At step4, when the UE is powered on or switched on, the UE shall initiate the PS attach procedure.

At step15, the UE shall initiates a Service request procedure by sending a SERVICE REQUEST message with Service type = "data".

At step19, the UE shall initiates a Service request procedure by sending a SERVICE REQUEST message with Service type = "signalling".

12.9.7b Service Request / rejected / No Suitable Cells In Location Area

12.9.7b.1 Definition

12.9.7b.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "No Suitable Cells In Location Area", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and shall change to state GMM-REGISTERED.LIMITED-SERVICE.

2) store the LAI in the list of 'forbidden location areas for roaming'.

If no RRC connection exists, the UE shall perform the following additional actions immediately. If the UE is operating in operation mode A and an RRC connection exists, the UE shall perform these actions when the RRC connection is subsequently released:

1) if the UE is IMSI attached, the UE shall set the update status to U3 ROAMING NOT ALLOWED and shall reset the location update attempt counter. The new MM state is MM IDLE.

2) search for a suitable cell in a different location area on the same PLMN.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No Suitable Cells In Location Area".

12.9.7b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a Service request with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform routing area updating procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, goto step 15.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
2a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
2b		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = "GPRS attach" Mobile identity = IMSI
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c		SS		The SS starts ciphering and integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature MS identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = 'signalling'
9	<-		SERVICE REJECT	Reject cause = 'No Suitable Cells In Location Area'
9a		SS		The SS releases the RRC connection The following message are sent and shall be received on cell B.
9b	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
9c		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
10a	<-		AUTHENTICATION AND CIPHERING REQUEST	
10b	->		AUTHENTICATION AND CIPHERING RESPONSE	
10c		SS		The SS starts ciphering and integrity protection.
11	<-		ROUTING AREA UPDATE ACCEPT	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-3 Update result = 'RA updated'
12	->		ROUTING AREA UPDATE COMPLETE	

13 13a	UE	IMSI DETACH INDICATION	The UE is switched off or power is removed (see ICS). Message not sent if power is removed This is applicable only for UE in UE operation mode A.
14	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
14a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
15	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 14.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.7b.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step10, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the routing area updating procedure.

12.9.7c Service Request / rejected / Roaming not allowed in this location area

12.9.7c.1 Definition

12.9.7c.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Roaming not allowed in this location area", the UE shall:

1) set the PS update status to GU3 ROAMING NOT ALLOWED
2) store the LAI in the list of "forbidden location areas for roaming".
3) perform a PLMN selection.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Roaming not allowed in this location area".

12.9.7c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE) in all cells.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a Service request with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE shall not perform PS attach procedure when the UE enters a different location area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
	SS			The following messages are sent and shall be received on cell A.
1	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1
6	SS			The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8		->	SERVICE REQUEST	Service type = "signalling"
9		<-	SERVICE REJECT	Reject cause = "roaming not allowed in this location area"
9a	SS			The SS releases the RRC connection.
10	UE			The UE performs PLMN selection.
11	SS			Set the cell type of cell A to the " Non-Suitable cell". Set the cell type of cell B to the " Serving cell". (see note)
12	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
13	SS			Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the " Serving cell". (see note) The following messages are sent and shall be received on cell C.
13a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-1 Old routing area identity = RAI-1
14a		<-	AUTHENTICATION AND CIPHERING REQUEST	
14b		->	AUTHENTICATION AND CIPHERING RESPONSE	
14c	SS			The SS starts integrity protection.

15	<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature MS identity = TMSI-2 Routing area identity = RAI-2
16	->	ROUTING AREA UPDATE COMPLETE	
17	UE		The UE is switched off or power is removed (see ICS).
18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS Detach'
18a	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
19	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 18.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE enters a same location area, UE shall:

- not initiate the combined PS attach procedure.

At step14, when the UE enters a different location area, UE shall:

- initiate the routing area updating procedure with information elements specified in the above Expected Sequence.

12.9.8 Service Request / Abnormal cases / Access barred due to access class control

12.9.8.1 Definition

12.9.8.2 Conformance requirement

If the UE access class X is barred, the UE shall:

1) not start Service Request procedure.

2) stay in the current serving cell.

3) applie normal cell reselection process.

If the UE access class X is granted or serving cell is changed, the UE may:

1) start Service Request procedure.

Reference

TS 24.008 clauses 4.7.13.5.

12.9.8.3 Test purpose

To test the behavior of the UE in case of access class control (access is granted).

12.9.8.4 Method of test

Initial condition

A random access class X (0-15) is selected. The USIM is programmed with this access class X.

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS initiates access class X barred. A service request procedure is not performed.

The SS initiates that access class X is not barred. A service request procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 15.
1a	UE			The UE is powered up or switched on and attempt to initiate an ATTACH. (see ICS)
2			Void	
3			Void	
4			Void	
4a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
5	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c	SS			The SS starts ciphering and integrity protection.

6	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
7	->	ATTACH COMPLETE	
7a	SS		UE is moved to PMM idle. (The SS releases the RRC connection)
7b	SS		The access class x is barred in cell A
8	UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8a	UE		No SERVICE REQUEST sent to SS, as access class x is barred. SS waits 30 seconds
8b	SS		The access class x is not barred any more
8c	UE		In manual attach mode UE may send a Detach Request (Note 1). If the SS receives a Detach Request the test execution continues from step 14.
8d	UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
9	->	SERVICE REQUEST	Service Type = "signalling".
10	<-	SERVICE REJECT	GMM cause = 'GPRS services not allowed'
11		VOID	
11a	SS		The SS releases the RRC connection.
12	UE		The UE is switched off or power is removed (see ICS).
13	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'
14	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
15	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 1a to step 14.
Note 1: Support of automatic PS attach procedure at switch on - no			

Specific message contents

None.

12.9.8.5 Test requirements

At step 8a, when the UE access class x is barred, UE shall:

- not perform Service Request procedure.

At step9, UE shall:

- perform Service Request procedure.

12.9.9 Service Request / Abnormal cases / Routing area update procedure is triggered

12.9.9.1 Definition

12.9.9.2 Conformance requirement

If a cell change into a new routing area occurs and the necessity of routing area update procedure is determined before the security mode control procedure is completed, the UE shall:

- abort Service request procedure.
- start routing area update procedure immediately.

Reference

TS 24.008 clause 4.7.13.5

12.9.9.3 Test purpose

To test the behavior of the UE in case of collision between Routing area update procedure and Service request procedure.

12.9.9.4 Method of test

Initial condition

System Simulator:

One cell with MCC1/MNC1/LAC1/RAC1 (RAI-1)
The cell is operating in network operation mode II .

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling in cell A.

b) The SS conveys change of routing area code to the UE..

c) The UE aborts Service request procedure and performs Routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 22.
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
5a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
6	SS			UE is moved to PMM Idle. The SS releases the RRC connection.
6a	UE			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	<-		UTRAN MOBILITY INFORMATION	The SS conveys updated CN system information for the PS domain to the UE in connected mode, including a new routing area code. Note: SS transmits the updated system information with the new RAI information in SIB1
8a	->		UTRAN MOBILITY INFORMATION CONFIRM	
9	UE			The UE aborts Service request procedure.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13			Void	
14			Void	
15			Void	
16			Void	
17			Void	
18			Void	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'

21	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message has been received within 1 second then the SS shall consider the UE as switched off.
22	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 21.
NOTE:	The definitions for "Suitable neighbour cell", “Non-suitable cell” and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

UTRAN MOBILITY INFORMATION (step 8)

The contents of the UTRAN MOBILITY INFORMATION message in this test case is identical to the default message in TS 34.108, with the following exceptions.

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode	Not Present
CN information info	
- PLMN identity	Not Present
- CN common GSM-MAP NAS system information	Not Present
- CN domain related information	
- CN domain identity	CS domain
- CN domain specific GSM-MAP NAS system info	
- T3212	Infinity
- ATT	0
- CN domain specific DRX cycle length coefficient	7
- CN domain related information	
- CN domain identity	PS domain
- CN domain specific GSM-MAP NAS system info	
- RAC	RAC-2
- NMO	1 (Network Mode of Operation II)
- CN domain specific DRX cycle length coefficient	7

12.9.9.5 Test requirements

At step 4, the UE shall send an ATTACH REQUEST message

At step 7, the UE shall send a SERVICE REQUEST message with Service type = "signalling".

At step 8, as the UE has received a new RAI in the UTRAN MOBILITY INFORMATION message before the SERVICE ACCEPT message or the SERVICE REJECT message is received, the UE shall abort service request procedure.

At step 10, the UE shall send a ROUTING AREA UPDATE REQUEST message.

-

12.9.10 Service Request / Abnormal cases / Power off

12.9.10.1 Definition

12.9.10.2 Conformance requirement

When the UE in GMM-SERVICE-REQUEST-INITIATED state is switched off, UE shall:

- perform PS detach procedure.

Reference

TS 24.008 clauses 4.7.13.5

12.9.10.3 Test purpose

To test the behavior of the UE in case of collision between Service request procedure and "powered off".

12.9.10.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

The UE is switched off after initiating a Service request procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 11.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	UE			The UE is powered off and initiates a PS detach (with power off) by MMI or by AT command.
9	->		DETACH REQUEST	Detach type = 'power switched off, GPRSdetach'
10	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
11	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 10.

Specific message contents

None.

12.9.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform the service request procedure

At step9, when the UE is switched off during the Service Request procedure, UE shall;

- abort the Service request procedure.
- perform the PS detach procedure.

12.9.11 Service Request / Abnormal cases / Service request procedure collision

12.9.11.1 Definition

12.9.11.2 Conformance requirement

Abnormal cases in the MS

The following abnormal cases can be identified:

- Procedure collision

  If the MS receives a DETACH REQUEST message from the network in state GMM-SERVICE-REQUEST-INITIATED, the GPRS detach procedure shall be progressed and the Service request procedure shall be aborted. If the cause IE, in the DETACH REQUEST message, indicated a "reattach request", the GPRS attach procedure shall be performed.

Reference

TS 24.008 clauses 4.7.13.5

12.9.11.3 Test purpose

To test the behaviour of the UE in case of collision between Service request procedure and PS detach procedure.

12.9.11.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) The SS does not respond to the SERVICE REQUEST for data. Instead it sends a DETACH REQUEST message to the UE, with the Detach type IE set to value "re-attach required".

c) After the UE receives the DETACH REQUEST message, the repeats the attach procedure.

d) The UE is switched off or power is removed. If the UE is switched off it sends a DETACH REQUEST.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 17.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7a	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7b	->		SERVICE REQUEST	Service type ="signalling"
7c	SS			The SS starts ciphering and integrity protection.
7d	SS			The SS initiates a Radio Bearer release procedure.
7e	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "data"
9	SS			The SS does not respond to SERVICE REQUEST message.
10	<-		DETACH REQUEST	Detach type = "re-attach required"
10a	->		DETACH ACCEPT	
11	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
11a	<-		AUTHENTICATION AND CIPHERING REQUEST	
11b	->		AUTHENTICATION AND CIPHERING RESPONSE	
11c	SS			The SS starts ciphering and integrity protection.
12	<-		ATTACH ACCEPT	Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Attach result = 'GPRS only attached'
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRSdetach'

16	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
17	UE		The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 16.

Specific message contents

None.

12.9.11.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives a DETACH REQUEST message from the network before the Service request procedure completes, UE shall;

- repeat the attach procedure.
- retry the Service request procedure

At step 19 if the UE is switched off, UE shall:

- perform the PS detach procedure.

12.9.12 Service Request / RAB re-establishment / UE initiated / Single PDP context

12.9.12.1 Definition

12.9.12.2 Conformance requirement

The following procedures shall be performed in the MS when radio coverage is lost:

- For a PDP context using background or interactive traffic class, the PDP context is preserved even if RRC re-establishment procedures have failed.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink) when the RRC re-establishment procedure has failed. After coverage is regained and if the MS did not deactivate the PDP Context locally the MS should start MS-initiated PDP Context Modification procedure or the PDP Context Deactivation procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.12.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with one preserved PDP context with traffic class "Background class" after normal RRC connection release as well as when radio coverage is lost.

To verify that the radio access bearer can be re-established for the preserved PDP context, initiated by the UE.

12.9.12.4 Method of test

Initial condition

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Test procedure

a) A PDP context with traffic class "Background class" is activated including the radio access bearer.

b) The SS releases the RRC connection, but keeps the PDP context.

c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

d) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

e) The SS configured the cell as a non-suitable "Off" cell for 4 minutes, making the UE to release the RAB and enter idle mode due to that radio coverage is lost.

f) The SS configures the cell as a serving cell.

g) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

h) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using a Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		SS		The SS releases the RRC connection
6	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
7		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
8	→		SERVICE REQUEST	Service type = "data"
9		SS		The SS starts ciphering and integrity protection.
10		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.
11		SS		The SS configures the cell as a non-suitable "Off" cell and waits for 4 minutes, making the UE to release the RAB and enter idle mode.
12		SS		The SS configures the cell as a serving cell.
13	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
14		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Background Call".
15	→		SERVICE REQUEST	Service type = "data"
16		SS		The SS starts ciphering and integrity protection.
17		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

Specific message contents

None.

12.9.12.5 Test requirements

After steps 7 and 14, UE shall:

- transmit a SERVICE REQUEST message with service type "data"

12.9.13 Service Request / RAB re-establishment / UE initiated / multiple PDP contexts

12.9.13.1 Definition

12.9.13.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.

- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

The MS initiates the re-establishment of RABs by using the Service Request (Service Type = Data) message.

The criteria to invoke the Service request procedure are when;

b) the MS, either in PMM-IDLE or PMM-CONNECTED mode, has pending user data to be sent and no radio access bearer is established for the corresponding PDP context. The procedure is initiated by an indication from the lower layers (see 3GPP TS 24.007). In this case, the service type shall be set to "data".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.13.3 Test purpose

To verify that the UE initiates a Service request procedure due to uplink data transmission with two PDP contexts with different traffic classes are activated, when one is of traffic class "background class" and the other is of traffic class "interactive class", after normal RRC connection release.

To verify that the radio access bearers can be re-established with a single radio bearer establishment procedure for the preserved PDP contexts, when initiated by the UE.

12.9.13.4 Method of test

Initial condition

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service	Yes/No
Secondary PDP context activation procedure	Yes/no

Test procedure

a) Two PDP contexts with different Traffic Classes are activated including the radio access bearers.

b) The SS releases the RRC connection, but keeps the two PDP contexts.

c) Due to transmission of uplink data, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

d) The SS responds with a SERVICE ACCEPT message and establishes the RABs for the two active PDP contexts using a single Radio bearer establishment procedure and the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3	SS			The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5	UE			Initiate a secondary PDP context activation
6	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request a Secondary PDP context activation with traffic class "Interactive class"
7	SS			The SS establishes the radio access bearer.
8	←		ACTIVATE SECONDARY PDP CONTEXT ACCEPT	Accept the Secondary PDP context activation
9	SS			The SS releases the RRC connection.
10	UE			The UE initiates transmission of uplink data, by MMI or by AT command.
11	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Originating Interactive Call", which is the most demanding traffic class among the active PDP contexts.
12	→		SERVICE REQUEST	Service type = "data"
13	SS			The SS starts ciphering and integrity protection.
14	SS			The SS establishes the radio access bearers simultaneously for the two active PDP contexts, using the same QoS that was used at activation.

Specific message contents

None.

12.9.13.5 Test requirements

After step 11, UE shall:

- transmit a SERVICE REQUEST message with service type "data".

12.9.14 Service Request / RAB re-establishment / Network initiated / single PDP context

12.9.14.1 Definition

12.9.14.2 Conformance requirement

The following procedures shall be performed in the MS when the RRC layer indicate to higher layer that a RAB has been released and the RAB release was not initiated due to a PDP Context Deactivation Procedure:

- For a PDP context using background or interactive traffic class, the PDP context is be preserved with no modifications.
- For a PDP context using streaming or conversational traffic class, the PDP context is preserved, but the maximum bit rate is downgraded to 0 kbit/s (for both uplink and downlink).

At this point or at a later stage, the MS may start a PDP Context Deactivation procedure or PDP Context Modification procedure. The MS shall use the PDP Context Modification procedure to re-activate the PDP context and re-establish the RAB.

The procedure for re-establishment of RABs allows the SGSN to re-establish RABs for active PDP contexts that don't have an associated RAB.

When RABs for an MS that has no RRC connection needs to be re-established, the CN must first page the MS.

The criteria to invoke the Service request procedure are when;

c) the MS receives a paging request for PS domain from the network in PMM-IDLE mode. In this case, the service type shall be set to "paging response".

After completion of a Service request procedure, the pending service is resumed and uses then the connection established by the procedure. If the service type is indicating "data", then the radio access bearers for all activated PDP contexts are re-established by the network, except for those activated PDP contexts having maximum bit rate value set to 0 kbit/s for both uplink and downlink. The re-establishment of radio access bearers for those PDP contexts is specified in subclause 6.1.3.3 of 3GPP TS 24.008.

Reference

TS 23.060 clause 9.2.3.4-5, 9.2.5.2

TS 24.008 clause 4.7.13

12.9.14.3 Test purpose

To verify that the radio access bearers can be re-established for the preserved PDP context with traffic class "Background class", when initiated from the network, after normal RRC connection release.

12.9.14.4 Method of test

System Simulator:

One cell, default parameters.

The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" (T3212 value is set to 0 and ATT flag is set to FALSE).

User Equipment:

The UE is in GMM-state "GMM-REGISTERED, normal service" with valid P-TMSI and CKSN.

Related ICS/IXIT statements

Support of PS service Yes/No

Test procedure

a) A PDP context with traffic class "Background class" is activated including the radio access bearer.

b) The SS releases the RRC connection, but keeps the PDP context.

c) The SS initiates paging of the UE.

d) As response to the paging, the UE initiates an RRC connection establishment and sends a SERVICE REQUEST.

e) The SS responds with a SERVICE ACCEPT message and establishes the RAB for the active PDP context using the same QoS as previously, without the need for PDP context modification.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context with traffic class "Background class"
3		SS		The SS starts ciphering and integrity protection and establishes the radio access bearer.
4	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
5		SS		The SS releases the RRC connection.
6		SS		The SS waits for 5 s to ensure the UE is in service.
7	←		PAGING TYPE 1	The SS initiates paging of the UE using the paging cause "Terminating Background Call"'
8		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to the same value as the paging cause.
9	→		SERVICE REQUEST	Service type = "Paging response"
10		SS		The SS starts ciphering and integrity protection.
11		SS		The SS establishes the radio access bearer for the active PDP context, using the same QoS that was used at activation.

Specific message contents

None.

12.9.14.5 Test requirements

After step 8, UE shall:

- transmit a SERVICE REQUEST with service type "Paging response"

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CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1124** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test case 12.9.3
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	34.123-1 section **12.9.3.4** mentions**:** At Step 23 of the Expected sequence to switch/power off the UE, later at Step 24 Registration on CS. Thus a Step 23 switch/power on the UE needs to be done.
Summary of change:	⌘	At the Step 23 added in the expected sequence to switch/power on of the UE.
Consequences if not approved:	⌘	Incorrect specification

Clauses affected:	⌘	12.9.3.4
Other specs affected:	⌘	Y / N ☐ / ☒ Other core specifications ☐ / ☒ Test specifications ☐ / ☒ O&M Specifications
Other comments:	⌘	Affects R99, Rel4 and Rel5 UEs

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

12.9.3 Service Request / rejected / Illegal MS

12.9.3.1 Definition

12.9.3.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Illegal MS", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and enter state GMM DEREGISTRATED. A UE operating in MS operation A shall in addition to set the update status to U3 ROAMING NOT ALLOWED.

2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number. A UE operating in MS operation A shall in addition delete any TMSI, LAI and ciphering key sequence number.

3) consider the USIM as invalid for PS service until switched off or the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.3.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Illegal MS".

12.9.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1, RAI-1 and IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

USIM removal possible without powering down Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #3(Illegal MS).

c) After the UE receives the SERVICE REJECT message with the cause value #3(Illegal MS), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the power of the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "Illegal MS"
9a	SS			The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
14b	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
17a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "Illegal MS"
20a		SS		The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
23	UE			If possible (see ICS) USIM replacement is performed. Otherwise if possible (see ICS) switch / power off is performed. ~~Otherwise the power is removed~~ The UE is then powered up or switched on (see ICS).
24	UE		Registration on CS	See TS 34.108 This is applicable only for UE in UE operation mode A.
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c		SS		The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a		SS		UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "Illegal MS"
32			VOID	
33			VOID	
34		SS		The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

None.

12.9.3.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

<< END OF MODIFIED SECTION >>

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Bangalore, India, 31st January – 4th February 2005

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CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1125 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to Package 4 GMM test case 12.2.1.6.2. (Revision of T1-050097 & T1-050228).
Source:	⌘	Aeroflex
Work item code:	⌘	TEI
Date:	⌘	03/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In step 8, the ATTACH REQUEST message shall be sent by UE with P-TMSI 2. This ATTACH REQUEST is the first GMM procedure after the preamble ts_IdleUpdated. In this preamble, the P-TMSI 1 is used; as a result UE will use this value. As ts_IdleUpdated is an already approved and stable step, it is recommended to change the prose. Therefore, it is required to make use of P_TMSI 1 rather than P-TMSI 2. The P-TMSI value shall also be corrected in the Initial Conditions for the User Equipment.
Summary of change:	⌘	In step 8 of the expected sequence and in the Initial Conditions for the User Equipment, replace P-TMSI2 by P-TMSI1
Consequences if not approved:	⌘	The prose and the TTCN will not be aligned.

Clauses affected:	⌘	12.2.1.6.4.2

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This CR aligns the prose with the TTCN; it does not have an impact on TTCN.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of Modification>

12.2.1.6 PS attach / abnormal cases / access barred due to access class control

12.2.1.6.1 Definition

12.2.1.6.2 Conformance requirement

1) The UE shall not perform PS attach procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the PS attach procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (Cell is changed).

12.2.1.6.4 Method of test

12.2.1.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x.
Communication with User Equipments using access class x is initially indicated to be barred.

System Simulator:

One cell operating in network operation mode II.
Access class x barred.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

The SS indicates that access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 12.
3	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
4	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
5	SS			The access class x is not barred anymore.
6	UE			The UE initiates a PS attach either automatically or manually (see ICS).
7	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
7a	<-		AUTHENTICATION AND CIPHERING REQUEST	
7b	->		AUTHENTICATION AND CIPHERING RESPONSE	
7c	SS			The SS starts integrity protection.
8	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1
9	->		ATTACH COMPLETE	
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
11a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
12	SS			The SS is set in network operation mode II.
13	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 11.

12.2.1.6.4.2 Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell A.

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred.
Both cells are operating in network operation mode II (in case of UE operation mode A).
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in both cells.

User Equipment:

The UE has a valid P-TMSI-~~2~~1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode C Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS indicates access class x barred. A PS attach procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
		SS		The following messages are sent and shall be received on cell A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is set in UE operation mode C (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
6		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			The UE initiates an attach either automatically or manually (see ICS).
8	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-~~2~~1 Old Routing area identity = RAI-1
8a	<-		AUTHENTICATION AND CIPHERING REQUEST	
8b	->		AUTHENTICATION AND CIPHERING RESPONSE	
8c	SS			The SS starts integrity protection.
9	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
10	->		ATTACH COMPLETE	
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
13	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.1.6.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step7, when the UE access class x is granted, UE shall:

initiate the PS attach procedure.

Test requirements for Test procedure2

At step5, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step8, when the serving cell is changed, UE shall:

- initiate the PS attach procedure.

<End of Modification>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st Jan - 4th Feb 2005

Tdoc ⌘T1-050453

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1127** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 3 RB test case 14.2.51a.1
Source:	⌘	Anite
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘ Mismatchs exist between in the order of UL and DL TFCS list mentioned in **34.123-1 section 14.2.51a.1.2.3** and the list sent to UE in the Radio Bearer Setup message in TTCN implementation.

In the TTCN implementation UL_TFC1 specified in 34.123-1 maps to CTFC2, UL_TFC2 maps to CTFC1, UL_TFC5 maps to CTFC6 and UL_TFC6 maps to CTFC5.

Similar mismatchs in mapping exist for DL TFCS.

The TFCS order is corrected in 34.108 by the T1-26 CR T1-050451.

The same needs to be modified in 34.123-1

Summary of change: ⌘
1) Updated the DL and UL TFCS list as per T1-26 CR T1-050451.
2) Updated the UL and DL TFCS for sub test 1 and 2.

Consequences if not approved: ⌘ Inconsistency will remain between 34.108 and 34.123-1

Clauses affected: ⌘ Section 14.2.51a.1.2.3

Other specs affected: ⌘

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

⌘

Other comments:	⌘ Affects Rel-5, Rel-4 and R99 UEs. This CR aligns Prose to TTCN

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<< START OF MODIFIED SECTION >>

14.2.51a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or Background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.51a.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:8 DL:8 kbps / PS RAB

14.2.51a.1.1 Conformance requirement

See 14.2.4.1.

14.2.51a.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51a for the 20 ms TTI case.

14.2.51a.1.3 Method of test

Initial Conditions

The following RLC Info parameter values for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB shall be set by the SS:

Uplink RLC TM RLC Transmission RLC discard CHOICE *SDU Discard Mode* Timer based no explicit Timer_discard Segmentation indication	 100ms FALSE
Downlink RLC TM RLC Segmentation indication	 FALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 8 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(~~TF0~~TF1, ~~TF1~~TF0, TF0)
UL_TFC2	(~~TF1~~TF0, ~~TF0~~TF1, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF0, TF1)
UL_TFC5	(~~TF0~~TF1, ~~TF1~~TF0, TF1)
UL_TFC6	(~~TF1~~TF0, ~~TF0~~TF1, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 8kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(~~TF0~~TF1, ~~TF1~~TF0, TF0)
DL_TFC2	(~~TF1~~TF0, ~~TF0~~TF1, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF0, TF1)
DL_TFC5	(~~TF0~~TF1, ~~TF1~~TF0, TF1)
DL_TFC6	(~~TF1~~TF0, ~~TF0~~TF1, TF1)
DL_TFC7	(TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_~~TFC1~~TFC2 DL_~~TFC5~~TFC6	UL_~~TFC1~~TFC2 UL_~~TFC5~~TFC6	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6~~5~~	RB5: 640 RB6: 312	RB5: No data RB6: 312
2	DL_~~TFC2~~TFC1 DL_~~TFC6~~TFC5	UL_~~TFC2~~TFC1 UL_~~TFC6~~TFC5	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5~~6~~	RB5: 640 RB6: 312	RB5: 2x640 RB6: No data
3	DL_TFC3 DL_TFC7	UL_TFC3 UL_TFC7	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7	RB5: 640 RB6: 312	RB5: 2x640 RB6: 312

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2_and UL_TFC4 are part of minimum set of TFCIs

NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: Test data size has been set to DL TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit). As the TTI for RB8 is the same for both downlink and uplink then UL RLC SDU size has been set to achieve UE to return one SDU per TTI, i.e. the UL RLC SDU size has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.2.51a.1.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15a and step 15b the UE shall return
   - for sub-test 1: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
   - for sub-test 2: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.
   - for sub-test 3: an RLC SDU on RB5 and RB6 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

<< END OF MODIFIED SECTION >>

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Bangalore, India , January 31 – February 04, 2005

Tdoc* ⌘*T1-050~~169~~454

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CHANGE REQUEST

⌘ **34.123-1** **CR** **1128** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction of A-GPS assistance data sets
Source:	⌘	Qualcomm
Work item code:	⌘	TEI
Date:	⌘	21/01/2005
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	~~The assistance data sets for A-GPS test cases contain "FFS" at several places which need to be clarified in order to run the test cases~~ I~~In addition, i~~t is unclear how almanac information shall be provided in case of UE requests for almanac.
Summary of change:	⌘	~~1)"FFS" is removed in the Reference Time IEs~~ ~~2)~~It is clarified that almanac information is provided in at least 2 Measurement Control messages if requested by the UE.
Consequences if not approved:	⌘	Different test implementations may be possible which may lead to different results.

Clauses affected:	⌘	17.2.1.3.5

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Affects REL-5, REL-4 and R99.

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.2.1.3.4 Inadequate assistance data for UE-assisted A-GPS

For UE-assisted test cases requiring inadequate assistance data, the IE "UE positioning GPS assistance data" is set to "Not present" in the MEASUREMENT CONTROL message.

17.2.1.3.5 Response to additional assistance data requests from UE

If the SS needs to send assistance data in response to a request for additional assistance data from the UE, the IE "UE positioning GPS assistance data" is set as follows:

- UE positioning GPS assistance data	
- UE positioning GPS reference time	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS reference UE position	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS DGPS corrections	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS navigation model	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS ionospheric model	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS UTC model	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS almanac	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS acquisition assistance	Set according to 17.2.1.2 if requested by the UE
- UE positioning GPS real-time integrity	Set according to 17.2.1.2 if requested by the UE

The SS provides navigation-model information for at most four satellites in any one MEASUREMENT CONTROL message; additional satellites are spread across subsequent MEASUREMENT CONTROL messages.

The SS provides almanac information in at least two MEASUREMENT CONTROL messages.

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Bangalore, India, 31st January-4th February 2005

Tdoc ⌘T1-050471r1

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1129** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1 Rel-5: Correction to P4 RRC test case 8.1.7.1d (Revision of T1-050249)
Source:	⌘	Rohde & Schwarz
Work item code:	⌘	TEI
Date:	⌘	09/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	• There are ambiguities in the test procedure and expected sequence in test case 8.1.7.1d. In the expected sequence, step 5, it is unclear how the SS should receive a SECURITY MODE COMPLETE and not acknowledge it at the RLC level. • The Cell Update procedure is present in the Expected Sequence, but missing in the Test Procedure
Summary of change:	⌘	• In step 5 of test case 8.1.7.1d the SS is supposed to transmit a valid SECURITY MODE COMMAND message. Subsequently, the SS shall power down the cell as stated in the test procedure. • Added Cell Update procedure in the Test Procedure • Typo Errors Corrected.
Consequences if not approved:	⌘	Without aligning the test case to the test method in test case 8.1.7.1d the test purpose may not be reached as incorrect security keys may be used, if the cell is not powered off as required.

Clauses affected:	⌘	8.1.7.1d

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
		X		Test specifications	34.123-3
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5.			

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START OF MODIFIED SECTION>

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
Uplink integrity protection activation info	
- RRC message sequence number list	Check to see if the RRC SN for RB 0 to RB 4 are present
-RRC message sequence number	Check to see if the RRC SN for RB 0 is present
-RRC message sequence number	Check to see if the RRC SN for RB 1 is present
-RRC message sequence number	Check to see if the RRC SN for RB 2 is present
-RRC message sequence number	Check to see if the RRC SN for RB 3 is present
-RRC message sequence number	Check to see if the RRC SN for RB 4 is present
Radio bearer uplink ciphering activation time info	
- Radio bearer activation time	
- RB Identity	1
- RLC sequence number	Check to see if the RLC SN for RB1 is present
- RB Identity	2
- RLC sequence number	SS records this value. See step 10 in 'expected sequence'
- RB Identity	3
- RLC sequence number	Check to see if the RLC SN for RB3 is present
- RB Identity	4
- RLC sequence number	Check to see if the RLC SN for RB4 is present
- RB Identity	20
- RLC sequence number	Check to see if the RLC SN for RB20 is present

8.1.7.1c.5 Test requirement

After step 7 the SS checks that the SECURITY MODE COMPLETE message is received ciphered using the old configuration and that the calculated "integrity check info" IE is correct.

After step 8 SS verifies that all uplink signalling messages on RB2 are integrity protected with UIA1 algorithm.

After uplink ciphering activation time has lapsed, SS verifies that the UE CAPABILITY INFORMATION message received is integrity protected with UIA algorithm and ciphered with the new ciphering configuration and algorithm indicated in the SECURITY MODE COMMAND (Step 7) message.

After downlink ciphering activation time has lapsed, SS shall apply ciphering to all downlink messages using the new configuration. At least one more cycle between step 9 and step 11 shall be repeated correctly after activation time on both directions has lapsed and the messages on both direction shall be ciphered and integrity protected..

8.1.7.1d Security mode control in CELL_DCH state interrupted by a cell update

8.1.7.1d.1 Definition

8.1.7.1d.2 Conformance requirement

If:

- a cell update procedure according to subclause 8.3.1 is initiated; and
- the received SECURITY MODE COMMAND message causes either,
  - the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE; and/or
  - the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to be set to TRUE:

the UE shall:

1> abort the ongoing integrity and/or ciphering reconfiguration;

1> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;

1> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;

1> when the response message has been submitted to lower layers for transmission:

2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":

3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":

3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

3> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received; and

2> clear the variable SECURITY_MODIFICATION;

2> the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.12.4b,

8.1.7.1d.3 Test purpose

To confirm that the UE aborts the ongoing integrity and ciphering configuration and the security mode control procedure in case it is interrupted by a cell update procedure.

8.1.7.1d.4 Method of test

Initial Condition

System Simulator: 1 cell.

SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

The RRC CONNECTION SETUP message used in the initial setup should be as shown under Specific Message Contents below.

Test Procedure

The UE is in CELL_DCH state. The SS initiates an Authentication and Ciphering procedure, which will result in the generation of a new security keyset (CK/IK).

The SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE..

Then SS ~~immediately~~ turn~~e~~s off the power in the cell after the UE has received the Security Mode Command , but before the UE could complete this security procedure to change over to the new security configuration.~~, so~~ The UE will initiate the cell reselection procedure.

The UE shall then abort the Security procedure and is expected to continue to use the old security configuration.

Then after 6 seconds the power is turned on in the cell again.

The UE sends a CELL UPDATE message which includes the value "Radio link failure" set in IE "Cell update cause". The SS verifies that this message is integrity-protected correctly with the old security configuration. The SS shall transmit a CELL UPDATE CONFIRM message which includes "Physical channel information elements", on downlink DCCH after receiving CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using RLC-AM. SS verifies that this message is both integrity-protected and ciphered correctly with the old security configuration.

Next, the SS transmits UE CAPABILITY ENQUIRY message on the downlink DCCH using RLC-AM mode. The UE shall respond to with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM using the same old integrity and ciphering configuration as used before the SECURITY MODE COMMAND was received.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_DCH state.
2	←		AUTHENTICATION AND CIPHERING REQUEST	GMM message which will result in the generation of a new security keyset
3	→		AUTHENTICATION AND CIPHERING RESPONSE	GMM
4	←		SECURITY MODE COMMAND	See specific message contents. The SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE.
5	→		~~SECURITY MODE COMPLETE~~	SS ~~immediately~~ turn~~e~~s off the power in the cell after the UE has received the Security Mode Command , but before the UE could complete this security procedure to change over to the new security configuration.
6				The UE starts cell reselection
7				After waiting for 6 seconds, the SS turns on power in the cell.
8	→		CELL UPDATE	This message includes the value "Radio link failure" set in IE "Cell update cause". The SS verifies that message is integrity-protected correctly with the old security configuration
9	←		CELL UPDATE CONFIRM	This message includes "Physical channel information elements".
10	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE shall send this message on the uplink DCCH using RLC-AM. SS verifies that message is both integrity-protected and ciphered correctly with the old security configuration
11	←		UE CAPABILITY ENQUIRY	The SS repeats step 11, 12 and 13 until its internal uplink and downlink RLC SN have both surpassed the uplink and downlink ciphering activation time specified for RB2. This message is sent on the downlink DCCH using RLC-AM.
12	→		UE CAPABILITY INFORMATION	The UE shall send this message on the uplink DCCH using RLC-AM. SS verifies that the last UE CAPABILITY INFORMATION message is both integrity-protected and ciphered correctly.
13	←		UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

RRC CONNECTION SETUP (message used in the initial setup)

Use the same message type and contents as found in clause 9 of TS 34.108 with the following exception:

Signalling RB information to setup	(AM DCCH for RRC)
- RB identity	Not Present
- CHOICE RLC info type	
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	32
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	OMIT
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

SECURITY MODE COMMAND (Step 4)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Integrity check info	
Message authentication code	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
RRC Message sequence number	Next RRC SN
Security Capability	Same as originally sent by UE (and stored in SS)
Ciphering mode info	
Ciphering mode command	Start/restart
Ciphering algorithm	UEA1
Activation time for DPCH	Not Present
Radio bearer downlink ciphering activation time info	
RB Identity	1
RLC sequence number	Current RLC SN
RB Identity	2
RLC sequence number	Current RLC SN + 2
RB Identity	3
RLC sequence number	Current RLC SN
RB Identity	4
RLC sequence number	Current RLC SN
RB Identity	20
RLC sequence number	Current RLC SN
Integrity protection mode info	
Integrity protection mode command	Modify
Downlink integrity protection activation info	
	Current RRC SN for SRB0
	Current RRC SN for SRB1
	Current RRC SN for SRB2
	Current RRC SN for SRB3
	Current RRC SN for SRB4
Integrity protection algorithm	UIA1
CN domain identity	PS Domain

NOTE: "Current RLC SN" is defined as the value of VT(S) in the SS at the time when the SECURITY MODE COMMAND is submitted to RLC for transmission, that is, the RLC send sequence number of the next transmitted RLC PDU on the particular radio bearer. "Current RRC SN" is defined as the RRC message sequence number of the next transmitted RRC message on the particular radio bearer.

CELL UPDATE (Step 8)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in clause 9 of TS 34.108 Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001'
Cell Update Cause	"Radio link failure"

CELL UPDATE CONFIRM (Step 9) (FDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 8
RRC State indicator	CELL_DCH
CHOICE channel requirement	Uplink DPCH info
-UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information common for all radio links	Same as RRC CONNECTION SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 9) (TDD)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in clause 9 of TS 34.108 Annex A with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 8
RRC State indicator	CELL_DCH
UplinkDPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

8.1.7.1d.5 Test requirement

After uplink ciphering activation time has lapsed, SS verifies that the UE CAPABILITY INFORMATION message received at step 12 is integrity protected with UIA algorithm and ciphered with the old ciphering configuration and algorithm and not the one indicated in the SECURITY MODE COMMAND (Step 4) message.

<END OF MODIFIED SECTION>

3GPP TSG-T WG1 Meeting #26
Bangalore, India, 31th January – 4th Feburary 2005

Tdoc ⌘T1-050459
Agenda Item 8.8.11

CR-Form-v7.1

CHANGE REQUEST

⌘ **34.123-1 CR** 1130 ⌘ **rev** - ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS34.123-1 Rel-5; Correction to HSDPA test cases (Revision of T1-050182)
Source:	⌘	NTT DoCoMo
Work item code:	⌘	HSDPA
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change: ⌘

1) To increase test coverage, timing re-initialized HHO and unsynchronised timing procedure is introduced for the test case of 8.2.1.29.

Revision 1 (From T1-050182)

It was mistakenly proposed to remove TC 8.2.3.34 in T1-050175 (which is revised into T1-050436). We would remain TC 8.2.3.34 as it is.

~~2)This expected sequence for the test case of 8.2.3.34 is to release CS Bearer and simultaneously reconfigure RLC entity in order to release a radio bearer mapped to HS-DSCH.~~

~~However, it is impossible to release some RBs and simultaneously reconfigure the RLC entity of already established RB, because there is not the IE "RB information to reconfigure list" in a Rel-5 Radio Bearer Release message.~~

~~Therefore this test case is not suitable and should be removed from the test spec.~~

Summary of change: ⌘

1) The following changes are applied for the test case of 8.2.1.29,

- Change the title.

		- For unsyhchronised timing procedure, the IE “Activation time” is set to “Now”. - Timing re-initialized HHO is applied for this test case. 2) ~~Remove the test case of 8.2.3.34.~~
Consequences if not approved:	⌘	1) Limit the test coverage for HSDPA. 2) ~~This test case is out of scope of Rel-5.~~

Clauses affected:	⌘	8.2.1.29, ~~8.2.3.34~~			
Other specs Affected:	⌘	**Y** / **N** ☐ / **X** Other core specifications **X** / ☐ Test specifications ☐ / **X** O&M Specifications	⌘	TS34.123-2	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<<Start of Modification>>

8.2.1.29 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialized hard handover to another frequency, ~~,~~ Uplink TFCS restriction~~,~~ and start of HS-DSCH reception)

8.2.1.29.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.29.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER SETUPmessage, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If IE "Timing indication" has the value "initialise", UE shall:

1> execute the Timing Re-initialised hard handover procedure by following the procedure indicated in the subclause relevant to the procedure chosen by the UTRAN.

…

~~If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:~~

~~1> at the activation time T:~~

~~2> for an HS-DSCH related reconfiguration caused by the received message:~~

~~3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;~~

~~3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.~~

~~2> for actions, other than a physical channel reconfiguration, caused by the received message:~~

~~3> perform the actions for the information elements in the received message as specified elsewhere.~~

~~NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.~~

~~…~~

If the IE "New H-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the value in the variable H_RNTI;

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b.

2> if the value of the IE "MAC-hs reset indicator" is TRUE:

3> reset the MAC-hs entity.

…

If the IE "HS-SCCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the received configuration.

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

…

If the IE "Measurement Feedback Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the received configuration.

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.5.25, ~~8.6.3.1,~~ 8.6.3.1b, 8.6.5.6, 8.6.6.33, 8.6.6.34

8.2.1.29.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to HS-DSCH using uplink TFCS restriction according to the received RADIO BEARER SETUP message.

8.2.1.29.4 Method of test

Initial Condition

System Simulator: ~~1 cell~~2 cells – Cell 1 is active and cell 6 is inactive.

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

Table 8.2.1.29

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84MHz	-55	-55	OFF	-55
P-CCPCH RSCP (TDD)	dBm	-55	-55	OFF	-55

Table 8.2.1.29 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execusion. Column marked "T0" denote the initial conditions.

The UE is in CELL_DCH state, after the test operator is prompted to make an out-going call. Before step1, ~~O~~only signalling radio bearers have been established. SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.29. Then SS switches its downlink transmission power setting to columns "T1".

~~The test operator is prompted to make an out-going call.~~ The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio access bearer mapped to HS-DSCH using a 384 kbps uplink DCH restricted to 64 kbps. After the UE receives this message, it configures them and establishes a radio access bearer in cell 6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	SS receives this message from cell 6.
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" and the radio bearer configuration for "Interactive or background / UL:384 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108, except for the following:

Information Element	Value/remark
Activation time	Now
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
UL Transport channel information for all transport channels - UL DCH TFCS	 Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
CHOICE channel requirement - Uplink DPCH power control info - CHOICE mode - Scrambling code type - Scrambling code number - Number of DPDCH - Spreading factor - TFCI existence - Number of FBI bit - Puncturing Limit	Uplink DPCH info Same contents as a RADIO BEARER SETUP message used in initial procedure FDD Long 0 (0 to 16777215) Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set. Not Present Set according to the radio bearer configuration for "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" in 34.108 clause 6.10 Parameter Set.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Frequecny info - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 350

8.2.1.29.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

<<End of Modification>>

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050463

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1131 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to HSDPA RRC test cases 8.2.1.28 & 8.2.3.34 (revision of T1-050073)
Source:	⌘	Nokia, ETSI MCC160
Work item code:	⌘	TEI
Date:	⌘	17/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	1. In the prose CR T1-050036 presented at this meeting & introducing the ASP's for HSDPA, the Radio Bearer mapped on top of HS-DSCH has an identity of 25. However the Radio Bearer Identity used in 34.108 & 34.123-1 is defined as 23. 2. For test case 8.2.1.28, at step 1 the IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose. 3. Editorial error: chapter number 8.2.3.32.4 is incorrect.
Summary of change:	⌘	1. Update TS34.123-1 to use RB25 instead of RB23. 2. In test case 8.2.1.28, at step 1 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment'. 3. Editorial error: 8.2.3.32.4 is replaced by 8.2.3.34.4.
Consequences if not approved:	⌘	An inconsistency between 34.123-1 & 34.123-3 will remain.

Clauses affected:	⌘	8.2.1.28, 8.2.3.34			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	34.108
		☐ / ☒			
		☒ / ☐	Test specifications		
		☐ / ☒	O&M Specifications		
Other comments:	⌘	T1-050072 updates TS34.108 accordingly.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.1.28 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (RB mapping for both DL DCH and HS-DSCH in cell without HS-DSCH support)

8.2.1.28.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.28.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER SETUPmessage, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

…

If the IE "New H-RNTI" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> if the IE "Downlink HS-PDSCH Information" is also included and the UE would enter CELL_DCH state according to subclause 8.6.3.3 of TS 25.331 applied on the received message:

2> store the value in the variable H_RNTI.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

…

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

1> if the choice "DL parameters" is set to 'HSDSCH':

2> if the IE "HARQ Info" is included:

3> perform the actions specified in subclause 8.6.5.6b of TS 25.331.

…

If the IE "HS-SCCH Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the received configuration.

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> in the case of FDD:

2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".

…

If the IE "Measurement Feedback Info" is included and the UE will be in CELL_DCH state after completion of this procedure, the UE shall:

1> store the received configuration.

1> determine the value for the HS_DSCH_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

When the variable HS_DSCH_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25, 8.6.3.1, 8.6.3.1b, 8.6.5.6, 8.6.6.33, 8.6.6.34

8.2.1.28.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to DCH and HS-DSCH according to the received RADIO BEARER SETUP message in a cell without HS-DSCH.

8.2.1.28.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_DCH state. Only signalling radio bearers have been established.

The test operator is prompted to make an out-going call. The SS transmits a RADIO BEARER SETUP message to the UE. This message requests the establishment of radio bearer with RB mapping to DCH and HS-DSCH. After the UE receives this message, it establishes a radio bearer and maps it to the DCH. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
New H-RNTI	Not present
RAB information for setup	
- RAB info	(high-speed AM DTCH for PS domain)
- RAB identity	0000 0110B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Same as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108
Added or Reconfigured DL TrCH information	Same as specified for "Packet to CELL_DCH from CELL_DCH in PS" in TS 34.108
Downlink HS-PDSCH Information	Not Present
Downlink information per radio link list	Same as specified for "Packet to CELL_DCH from CELL_DCH in PS" in TS 34.108

8.2.1.28.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

8.2.3.34 Radio Bearer Release for transition from CELL_DCH to CELL_FACH: Success (stop of HS-DSCH reception with frequency modification)

8.2.3.34.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.3.34.2 Conformance requirement

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

1> stop any HS-DSCH reception procedures according to the stored HS-PDSCH configuration;

1> clear any stored HS-PDSCH configuration;

1> remove any H-RNTI stored;

1> clear the variable H_RNTI;

1> set the variable HS_DSCH_RECEPTION to FALSE.

Reference

3GPP TS 25.331 clauses 8.2.2.3.

8.2.3.34.3 Test purpose

To confirm that the UE stops HS-DSCH reception when UE releases CS RAB according to the received RADIO BEARER RELEASE message.

8.2.3.3~~2~~4.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 6 is inactive

UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in CELL_DCH state and only signalling radio bearers have been established. SS initiates P25 to make the UE to move to state 6-17 as specified in TS 34.108 clause 7.4. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. The SS initiates P24 to set up CS RAB.

Then SS transmits a RADIO BEARER RELEASE message to the UE. The UE transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message (Step0).
1	←→		P24	SS establishes CS RAB
2	←		RADIO BEARER RELEASE	SS releases CS RAB.
3	→		RADIO BEARER RELEASE COMPLETE	
4	←→		CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108

RADIO BEARER RELEASE (Step 2)

Use the same message as specified for "Speech to CELL_FACH from CELL_DCH in CS" in 34.108, except for the following;

Information Element	Value/remark
RB information to release - RB identity	Same as the set defined in RADIO BEARER REALESE message found in TS 34.108 clause 9 under condition A8, including the following IEs; ~~23~~25
Deleted DL TrCH Information - Downlink transport channel type - DL HS-DSCH MAC-d flow identity	Same as the set defined in RADIO BEARER REALESE message found in TS 34.108 clause 9 under condition A8, including the following IEs; HS-DSCH 0
Frequency info - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6

8.2.3.34.5 Test requirements

After step 2, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050002

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CHANGE REQUEST

⌘ **34.123-1** **CR** **1045** ⌘ **rev** **-** ⌘ Current version: 5.10.0 ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 RRC test case 8.3.1.10
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The specific message content PAGING TYPE 1 (step 4) is inconsistent with other test cases of similar nature. It is also mis-aligned with the current TTCN implementation.
Summary of change:	⌘	The specific message content PAGING TYPE 1 (step 4) has been removed.
Consequences if not approved:	⌘	The prose will be inconsistent with the TTCN and may fail validation.
Clauses affected:	⌘	8.3.1.10.4

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘ No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1.10 Cell Update: expiry of T307 after T305 expiry and being out of service area

8.3.1.10.1 Definition

8.3.1.10.2 Conformance requirement

When the T307 expires, the UE shall:

1> move to idle mode;

1> release all dedicated resources;

1> perform other actions when entering idle mode from connected mode as specified in TS 25.331 subclause 8.5.2;

1> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.10.3 Test purpose

1 To confirm that the UE moves to idle mode after the expiry of T307, indicating that it is out of service area when attempting to perform a periodic cell updating procedure.

8.3.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell
UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.
Timer T305 is set to 5min.

Test Procedure

Table 8.3.1.10

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.10 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.
The UE is in CELL_FACH state at the start of the test. Before the expiry of periodic cell updating timer T305, the content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. After T305 expires, UE shall transmit CELL UPDATE message with IE "cell update cause" set to "periodical cell update". SS shall transmit CELL UPDATE CONFIRM message. Now the UE and SS are synchronized. Immediately after the cell update procedure is finalized, the SS starts a delay timer T_{delay} (see below for limits on the timer value). When T_{delay} expires the SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that S<0 and this results in a "out of service area" condition. The SS continues to listen to the uplink channel to detect possible attempts to perform a cell updating procedure. The UE shall not send any CELL UPDATE message on the uplink CCCH, instead it triggers timer T307 after expiry of T305. After the expiry of timer T305+T307+10% margin since completion of the cell update procedure, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that S>0, the UE shall enter idle state. SS waits for 15s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Note 1 : The value chosen for Tdelay should be midway between the following logical minimum and maximum values:

Minimum > T305 + T307 – T317

Maximum < T305

Note 2 : TS 25.331 (from June 2003) specifies that the UE should treat any value of T317 received from UTRAN as though it is equal to infinity. Nevertheless, the value of T317 used in Note 1 should be the value broadcast in SIB1 by the SS (or the implied default value if none is broadcast).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		SYSTEM INFORMATION CHANGE INDICATION	
1c	→		CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell update".
1d	←		CELL UPDATE CONFIRM	
1e				SS waits T_{delay} (see above)
2a				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that the cell is no longer suitable for camping. The UE shall detect that it is out of service area and refrains from transmitting CELL UPDATE message due to periodic cell updating.
2b				SS waits a further (T305+T307- T_{delay}) +10% for UE to enter idle mode.
3				The UE detects the expiry of timer T305 and it searches for other cells to camp on. After the expiry of timer T307, the UE shall enter idle mode. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that the cell is suitable for camping. SS waits for 15s.
4	←→		CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-70

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value tag	2

CELL UPDATE (Step 1c)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'periodical cell updating'

~~PAGING TYPE 1 (Step 4)~~

~~Use the same message type found in TS 34.108 clause 9, with the following exception.~~

~~Information Element~~	~~Value/remark~~
~~Paging record list~~	~~Only 1 entry~~
~~Paging record~~	
~~CHOICE Used paging identity~~	~~CN identity~~
~~- Paging cause~~	~~Terminating Call with one of the supported services~~
~~- CN domain identity~~	~~Supported Domain (PS Domain or CS Domain)~~
~~- CHOICE UE Identity~~	~~IMSI~~
~~- IMSI~~	~~Set to the same IMSI value stored in the TEST USIM card.~~

8.3.1.10.5 Test requirement

After step 3 the UE shall move to idle mode.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050006

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CHANGE REQUEST

⌘ **34.123-1** **CR** **1046** ⌘**rev** **-** ⌘ Current version: 5.10.0 ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test case 12.4.1.4a
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The value of the Routing area identity in step 24 and 29 are incorrect. In the Attach Accept in step 19, the UE is given a Routing area identity of RAI-6, but in step 24 and 29, it expects the UE to use RAI-3 which is incorrect.
Summary of change:	⌘	In step 24 and 29, the Routing area identity value has been changed from RAI-3 to RAI-6.
Consequences if not approved:	⌘	The prose will be inconsistent with the TTCN.

Clauses affected:	⌘	12.4.1.4a.4

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.4.1.4aRouting area updating / rejected / location area not allowed

12.4.1.4a.1 Definition

12.4.1.4a.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

   1.1 not perform PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature and TMSI, LAI and ciphering key sequence number.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

   1.4 not delete the list of "equivalent PLMNs".

   1.5 perform a cell selection.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment:

   2.1 may perform routing area update when a new location area is entered.

   2.2 shall delete the list of forbidden LAs after switch off (power off).

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4a.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Location Area not allowed'.
To test that the UE deletes the list of forbidden LAs when power is switched off.

12.4.1.4a.4 Method of test

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) , cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell D in MCC2/MNC1/LAC2/RAC1(RAI-6).
All four cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

The PLMN contains Cell D is equivalent to the PLMN that contains Cell C.

NB: i) Cell D will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off.
Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell C.
1		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 33.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell C is preferred by the UE.
3a			Void	
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
6	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
8		SS		Cell B is preferred by the UE.
8a				The following step is only performed for UE Operation Mode A.
8b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signatureOld P-TMSI signature= Routing area identOld ity = RAI-3
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Location Area not allowed'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
		SS		The following messages are sent and shall be received on cell A.
13		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". (see note)
13a	UE			The UE performs cell selection.
14	UE			Cell A is preferred by the UE.
15	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
16		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16a	UE			The UE performs cell selection.

Step	Direction		Message	Comments
	UE	SS		
17	UE			Cell D is preferred by the UE. The following messages are sent and shall be received on cell D.
17a				The following step is only performed for UE Operation Mode A.
17b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20	->		ATTACH COMPLETE	
21	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-2 Old Routing area identity = RAI-6~~3~~
24a	<-		AUTHENTICATION AND CIPHERING REQUEST	
24b	->		AUTHENTICATION AND CIPHERING RESPONSE	
24c	SS			The SS starts integrity protection.
25	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
26	->		ATTACH COMPLETE	
	SS			The following messages are sent and shall be received on cell A.
27				Set the cell type of cell A to the "Serving cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
28				Cell A is preferred by the UE.
28a				The following step is only performed for UE Operation Mode A.
28b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
29	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-1 signature Old Routing area identity = RAI-6~~3~~
30	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
31	UE			The UE is switched off or power is removed (see ICS).

Step	Direction		Message	Comments
	UE	SS		
32	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
32a	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
33 34	SS UE			The SS is set in network operation mode II. The UE is set in UE operation mode A (see ICS), cell A is switched off and the test is repeated from step 3 to step 32.
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12 and 15, when in the same location area, UE shall

- not perform PS attach procedure.

At step18, when a new location area is entered, UE shall

- perform the PS attach procedure.

At step24, when the USIM is replaced , UE shall;

- perform the PS attach procedure.

At step29, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050007

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1047 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test case 12.4.1.4d Proc 1
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The value of the Mobile identity of the PagingType1 message in step 40 is incorrect. In step 22, the UE has been assigned a Mobile identity of P-TMSI-1 and is this value that should be used in step 40.
Summary of change:	⌘	In step 40, the Mobile identity has been changed fro P-TMSI-2 to P-TMSI-1.
Consequences if not approved:	⌘	The test may pass a non-conformant UE and the prose will be inconsistent with the TTCN.

Clauses affected:	⌘	12.4.1.4d.4.1

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.4.1.4dRouting area updating / rejected / Roaming not allowed in this location area

12.4.1.4d.1 Definition

12.4.1.4d.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1 shall not perform PS attach when in the same location area.

   1.2 shall store the LA in the 'forbidden location areas for roaming'.

   1.3 shall perform a routing area updating when entering into a new location area if the LAI or the PLMN identity is not contained in any of the lists "forbidden LAs for roaming", "forbidden LAs for regional provision of service", "forbidden PLMNs for GPRS service" or "forbidden PLMNs" and the current status is different from "IDLE NO IMSI".

2) The User Equipment shall erase the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

References

3GPP TS 24.008 clause 4.7.5.1.4.
3GPP TS 23.122 clause 4.5.2.
3GPP TS 24.008 clause 4.4.1.

12.4.1.4d.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this location area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.1.4d.4 Method of test

12.4.1.4d.4.1 Test procedure1

Initial condition

System Simulator:
Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:
The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this location area'. A new attempt for a PS attach is not possible. Successful PS attach procedure is performed in another location area. The

UE is moved back to the 1st location area. A routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach ' Mobile identity =IMSI
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c		SS		The SS starts integrity protection.
5		<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
8a	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-2
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this location area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
20			Void	
21		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Mobile identity = P-TMSI-2

Step	Direction		Message	Comments
	UE	SS		
21a	<-		AUTHENTICATION AND CIPHERING REQUEST	
21b	->		AUTHENTICATION AND CIPHERING RESPONSE	
21c		SS		The SS starts integrity protection.
22	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2
23	->		ROUTING AREA UPDATE COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25			Void	
26			Void	
27			Void	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		SS		The SS releases the RRC connection.
30			Void	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32			Void	
33			Void	
34			Void	
35	->		SERVICE REQUEST	service type = "paging response"
36		SS		The SS releases the RRC connection.
37			Void	
38		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
39		UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
40	<-		PAGING TYPE1	Mobile identity = P-TMSI-1~~2~~ Paging order is for PS services.
41		UE		No response from the UE to the request. This is checked for 10 seconds.

NOTE: The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050008

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1048 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 RRC test case 8.1.3.5
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Step 8 specific message contents for RRC Connection Release, the Integrity check info should not be present because the CM service was rejected in the preamble thus the UE has not established integrity at this point.
Summary of change:	⌘	Step 8 specific message contents for RRC Connection Release, the Integrity check info has been changed to “Not present”
Consequences if not approved:	⌘	The test case will be incorrect and the prose will be inconsistent with the TTCN.

Clauses affected:	⌘	8.1.3.5.4

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

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8.1.3.5 RRC Connection Release in CELL_FACH state: Invalid message

8.1.3.5.1 Definition

8.1.3.5.2 Conformance requirement

If the RRC CONNECTION RELEASE message contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, and if the "protocol error cause" in PROTOCOL_ERROR_INFORMATION is set to any cause value except "ASN.1 violation or encoding error", the UE shall perform procedure specific error handling as follows:
The UE shall:

1> ignore any IE(s) causing the error but treat the rest of the RRC CONNECTION RELEASE message as normal according to TS 25.331 subclause 8.1.4.3, with an addition of the following actions:

2> if the RRC CONNECTION RELEASE message was received on the DCCH:

3> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Rejected transactions" in the variable TRANSACTIONS;

3> include the IE "Error indication" in the RRC CONNECTION RELEASE COMPLETE message with:

4> the IE "Failure cause" set to the cause value "Protocol error"; and

4> the IE "Protocol error information" set to the value of the variable PROTOCOL_ERROR_INFORMATION.

…
If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

1> set the variable PROTOCOL_ERROR_REJECT to TRUE;

1> set the IE "Protocol error cause" in the variable PROTOCOL_ERROR_INFORMATION to "Message extension not comprehended";

1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:

2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and

2> set the IE "RRC transaction identifier" to zero in that table entry.

1> perform procedure specific error handling according to TS 25.331 clause 8.

Reference

3GPP TS 25.331 clause 8.1.4 and 9.3b.

8.1.3.5.3 Test purpose

When the UE receives an invalid RRC CONNECTION RELEASE message on the downlink DCCH, it shall transmit an RRC CONNECTION RELEASE COMPLETE message that includes the appropriate error cause on the uplink DCCH.

8.1.3.5.4 Method of test

Initial Condition

System Simulator: 1 cell
UE: CELL_FACH state (state 6-2 or state 6-4)as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is initially in CELL FACH state. on reception of (CM) service request message from the UE, the SS will Send CM Service Reject message (for state 6-2) or Service Reject message (for state 6-4) to complete the (CM) service Request procedure. After the UE is brought into the stable state, the SS transmits an RRC CONNECTION RELEASE message containing an unexpected critical message extension on the DCCH to request the UE to disconnect the RRC connection. The UE shall transmit an RRC CONNECTION RELEASE COMPLETE message on the uplink DCCH, which includes the IE "Error indication". This IE shall contain the "Protocol error information" IE which in turn contains the IE “Protocol error cause” set to "Message extension not comprehended". Upon completion of the procedure, the SS calls for generic procedure C.1 to check that UE is in IDLE state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3			Void	
4			Void	
5			Void	
6			Void	
7			Void	
8	←		RRC CONNECTION RELEASE	See specific message contents for this message
9	→		RRC CONNECTION RELEASE COMPLETE	See specific message contents for this message This message is sent using acknowledged mode.
10			Void	
11			Void	
12			Void	
13	←→		CALL C.1	If the test result of C.1 indicates that UE is in IDLE state, the test passes, otherwise it fails.

Specific Message Contents

RRC CONNECTION RELEASE (Step 8)
This message must be recognised by the UE as an RRC CONNECTION RELEASE message. However, it shall be constructed (see TS 25.331 clause 10.1.1) such that the UE will detect critical extensions not defined for the protocol release supported by the UE:

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Integrity check info	Not present
~~- Message authentication code~~	~~SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.~~
~~- RRC Message sequence number~~	~~SS provides the value of this IE, from its internal counter.~~
Critical extensions	’FF’H

RRC CONNECTION RELEASE COMPLETE (Step 9)
Check to see if the same message type found in clause 9 of TS 34.108 is received, with the following exceptions:

Information Element	Value/remark
Error indication - Failure cause - Protocol error information - CHOICE diagnostics type - Protocol error cause	 'Protocol error' Protocol error cause Check to see if set to 'Message extension not comprehended'

8.1.3.5.5 Test requirement

After step 8 the UE shall transmit an RRC CONNECTION RELEASE COMPLETE message which includes the appropriate cause values in IE "Protocol error information".
After step 12 the UE shall be in IDLE state.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050010

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1049 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 RRC test case 8.3.4.3
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The secondary scrambling code and scrambling code change are inconsistent with the TTCN in step 0c and 3, message specific content.
Summary of change:	⌘	In step 0c message specific content, the scrambling code change has been modified from “Not present” to “No code change” In step 3 message specific content, - the secondary scrambling code has been changed from 2 ro 1. - the scrambling code change has been modified from “Not present” to “No code change”
Consequences if not approved:	⌘	The prose will be inconsistent with the TTCN.

Clauses affected:	⌘	8.3.4.3.4

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

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8.3.4.3 Active set update in soft handover: Combined radio link addition and removal

8.3.4.3.1 Definition

8.3.4.3.2 Conformance requirement

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following. The UE shall:

1> first add the RLs indicated in the IE "Radio Link Addition Information";

1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;

1> perform the physical layer synchronisation procedure B as specified in TS 25.214;

1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronization B, specified in TS 25.214;

…

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.3.3 Test purpose

1. To confirm that the UE continues to communicate with the SS on the added radio link and removes radio link which exists prior to the execution of active set update procedure.

8.3.4.3.4 Method of test

Initial Condition

System Simulator: 3 cells- Cell 1, Cell 2 and Cell 3 are active, with downlink transmission power settings according to columns "T0" in table 8.3.4.3.
UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE [Active set is not full.]

Specific Message Content

For system information block 11 (gives IE's which are different from defaults given in 34.108 sec 6.1) to be transmitted before idle update preamble.

System Information Block type 11

Use same message sub-clause 6.1 of TS34.108, with following exception:

Information Element	Value/remark
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Intra-frequency measurement reporting criteria	
- Parameters required for each event	3 kinds
- Intra-frequency event identity	1a
- Time to trigger	5000

Table 8.3.4.3

Parameter	Unit	Cell 1					Cell 2					Cell 3				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
UTRA RF Channel Number		Ch. 1					Ch. 1					Ch. 1				
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-60	OFF	-60	-80	-60	-60	OFF	-70	-80	-80	-60	-60	OFF

Table 8.3.4.3 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution.
The UE goes to connected mode and establishes a radio access bearer in the CELL_DCH state in cell 1.
SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3. UE transmits a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE in cell 1 an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information", indicating the addition of cell 2 into the active set, on DCCH using AM RLC.
When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.
SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 3 and then the SS transmits to the UE an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information" and IE "Radio Link Removal Information", indicating the removal of cell 2 and addition of cell 3 into the active set, on DCCH using AM RLC.
When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links and then the UE removes the radio link specified in an ACTIVE SET UPDATE message. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.
SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3. The UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 1 according to IE “Intra-frequency event identity” which is set to ‘1b’ in the SYSTEM INFORMATION BLOCK TYPE 11.
After the MEASUREMENT REPORT message is received, the SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond to this message through the DPCH in cell 3. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.
SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3. The UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 3 according to IE “Intra-frequency event identity” which is set to ‘1b’ in the SYSTEM INFORMATION BLOCK TYPE 11.
After the MEASUREMENT REPORT is received, the SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond to this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a				SS configures the initial active set with only cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3
0b	→		MEASUREMENT REPORT	See specific message contents for this message
0c	←		ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2.
0d	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
1				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3
2	→		MEASUREMENT REPORT	See specific message contents for this message
3	←		ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 3 and IE "Radio Link Removal Information" for cell 2.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link in cell 3 and removes the old radio link in cell 2.
4a				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3
4b	→		MEASUREMENT REPORT	See specific message contents for this message.
5	←		UE CAPABILITY ENQUIRY	Use default message.
6	→		UE CAPABILITY INFORMATION	Use default message.
7	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
8				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3
8a	→		MEASUREMENT REPORT	See specific message contents for this message.
9	←		UE CAPABILITY ENQUIRY	Use default message.
10	→		UE CAPABILITY INFORMATION	Use default message.
11	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.

Specific Message Content

MEASUREMENT REPORT (Step 0b)

NOTE 1: Cell measured results for cells 1 and 2 may appear in either order (i.e. cell 1 then cell 2 or cell 2 then cell 1)

NOTE 2: Cell measured results for cell 3 may or may not be present (depends upon the capability of the UE and test uncertainties in power level)

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 0c)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	~~Not Present~~No code change
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	FALSE
- SCCPCH information for FACH	Not Present

MEASUREMENT REPORT (Step 2)

NOTE 1: Cell measured results for cells 1, 2 and 3 may appear in any order.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	See Note 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 3
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	1~~2~~
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	~~Not Present~~No code change
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	FALSE
- SCCPCH information for FACH	Not Present
Radio link removal information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2

MEASUREMENT REPORT (Step 4b)

Note 1: UE may optionally include Cell measured results IE for Cell 1 and 2.
Note 2: Cell measured results for cells 1and 2 may appear in any order.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 1
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 2
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

MEASUREMENT REPORT (Step 8a)

Note: UE may optionally include Cell measured results IE for Cell 3.

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	UE may optionally include report for Cell 3
- Cell Identity	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1b
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

8.3.4.3.5 Test requirement

At step 0a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.
After step 0c the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.
After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.
After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.
After step 4a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.
After step 5 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH in cell 3.
After step 8 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.
After step 9 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH in cell 1.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050011

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1050 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test case 9.4.3.5
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**D**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In step 17 of the expected sequence, the comments mentions a specific message content for the Securty Mode Command. However, the message specific content does not exist.
Summary of change:	⌘	Removed the reference to message specific content in step 17 of the expected message sequence.
Consequences if not approved:	⌘	The prose will be incorrect.

Clauses affected:	⌘	9.4.3.5.4

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.4.3.5 Location updating / abnormal cases / Failure due to non-integrity protection

9.4.3.5.1 Definition

9.4.3.5.2 Conformance requirement

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

- MM messages:
  - AUTHENTICATION REQUEST
  - AUTHENTICATION REJECT
  - IDENTITY REQUEST
  - LOCATION UPDATING ACCEPT (at periodic location update with no change of location area or temporary identity)
  - LOCATION UPDATING REJECT
  - CM SERVICE ACCEPT, if the following two conditions apply:
    - no other MM connection is established; and
    - the CM SERVICE ACCEPT is the response to a CM SERVICE REQUEST with CM SERVICE TYPE IE set to 'emergency call establishment'
  - CM SERVICE REJECT
  - ABORT

References

TS 24.008 clauses 4.1.1.1.1

9.4.3.5.3 Test purpose

To verify that the UE ignores NAS signalling messages when the security mode procedure is not activated.

9.4.3.5.4 Method of test

Initial conditions

- System Simulator:
  - two cells: A and B, belonging to different location areas a and b.
- User Equipment:
  - the UE has a valid TMSI. It is "idle updated" on cell A.

Related ICS/IXIT statements

None.

Test Procedure

The location updating procedure is started. Upon reception of LOCATION UPDATING REQUEST message from the UE, the SS responds to LOCATION UPDATING ACCEPT message without the integrity protection. The UE shall ignore this message and restart the location updating procedure at expiry of timer T3211. This time the SS starts the authentication procedure and initiates the integrity protection. After receiving LOCATION UPDATING ACCEPT message, the UE shall respond to TMSI REALLOCATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". If PS mode: a routing area updating procedure should be performed.
3	→		LOCATION UPDATING REQUEST	
4	←		AUTHENTICATION REQUEST	
5	→		AUTHENTICATION RESPONSE	
6		SS		The SS does not initiate the security mode procedure.
7	←		LOCATION UPDATING ACCEPT	
8		UE		The UE ignores LOCATION UPDATING ACCEPT message.
9		SS		The SS waits T3210 expiry.
10		UE		The UE aborts the RR connection.
11		SS		The SS releases the RRC connection.
12		SS		The SS waits T3211 expiry.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14	→		LOCATION UPDATING REQUEST	
15	←		AUTHENTICATION REQUEST	
16	→		AUTHENTICATION RESPONSE	
17		SS		The SS starts the security mode procedure with the integrity protection. ~~The content of integrity protection mode info IE in SECURITY MODE COMMAND message is specified below.~~
18	←		LOCATION UPDATING ACCEPT	
19	→		TMSI REALLOCATION COMPLETE	
20		SS		The SS releases the RRC connection.
NOTE: The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

9.4.3.5.5 Test requirement

At step 8 the UE shall ignore the first LOCATION UPDATING ACCEPT message.
At step 14 the UE shall send LOCATION UPDATING REQUEST message after expiry of timer T3211.
At step 16 the UE shall respond to TMSI REALLOCATION COMPLITE message after the UE receives the second LOCATION UPDATING ACCEPT message.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050022

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1054 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 1 RRC test case 8.3.1.18
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘

At Step 10 of the expected sequence in the Cell Update Message, UE will set IE "T315 expired" to TRUE.

This as per 25.331 section 8.3.1.2:
"When initiating the URA update or cell update procedure, the UE shall:
1> ....
1> if the UE is in CELL_DCH state:
...
2> if the stored value of the timer T315 is equal to zero:
3> ....
3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.
"

However as per the default content mentioned in 34.108 section 9.1.1 for Cell Update message this IE should be set to FALSE.

Summary of change: ⌘ In step 10, specific message content CELL UPDATE, the IE RB timer indicator has been added with T315 expired set to TRUE.

Consequences if not approved: ⌘ The test case will fail conformant UE.

Clauses affected: ⌘ 8.3.1.18.4

	Y	N	
Other specs ⌘		X	Other core specifications ⌘

affected:		
	X	Test specifications
	X	O&M Specifications
Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1.18 Cell Update: Radio Link Failure (T314>0, T315=0), CS RAB established

8.3.1.18.1 Definition

8.3.1.18.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

…

1> Paging response:

…

1> Radio link failure:

2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:

2> if the UE is in CELL_DCH state and the criteria for radio link failure is met as specified in TS 25.331 subclause 8.5.6:

3> perform cell update using the cause "radio link failure".

…

When initiating the cell update procedure, the UE shall:

1> stop timer T305;

1> if the UE is in CELL_DCH state:

2> in the variable RB_TIMER_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;

2> if the stored values of the timer T314 and timer T315 are both equal to zero; or

2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315":

…

2> if the stored value of the timer T314 is equal to zero:

…

2> if the stored value of the timer T315 is equal to zero:

3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT315";

3> in the variable RB_TIMER_INDICATOR set the IE "T315 expired" to TRUE.

2> if the stored value of the timer T314 is greater than zero:

3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314":

4> start timer T314.

3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315":

4> start timer T314.

2> if the stored value of the timer T315 is greater than zero:

…

2> for the released radio bearer(s):

3> delete the information about the radio bearer from the variable ESTABLISHED_RABS;

3> when all radio bearers belonging to the same radio access bearer have been released:

4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED_RABS;

4> delete all information about the radio access bearer from the variable ESTABLISHED_RABS.

2> select a suitable UTRA cell according to TS 25.304;

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> set the variables PROTOCOL_ERROR_INDICATOR, FAILURE_INDICATOR, UNSUPPORTED_CONFIGURATION and INVALID_CONFIGURATION to FALSE;

1> set the variable CELL_UPDATE_STARTED to TRUE;

1> if the UE is not already in CELL_FACH state:

2> move to CELL_FACH state;

2> select PRACH according to TS 25.331 subclause 8.5.17;

2> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

2> use the transport format set given in system information as specified in TS 25.331 subclause 8.6.5.1.

1> if the UE performs cell re-selection:

2> clear the variable C_RNTI; and

2> stop using that C_RNTI just cleared from the variable C_RNTI in MAC.

1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;

1> in case of a cell update procedure:

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3;

2> submit the CELL UPDATE message for transmission on the uplink CCCH.

1> set counter V302 to 1;

1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

…

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL_DCH state:

1> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 in TS 25.331are not fulfilled; or

…

the UE shall:

…

1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:

2> set the variable ORDERED_RECONFIGURATION to FALSE.

1> if V302 is equal to or smaller than N302:

2> select a suitable UTRA cell according to TS 25.304;

2> set the contents of the CELL UPDATE message according to TS 25.331 subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

…

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.7a

8.3.1.18.3 Test purpose

1. To confirm that the UE shall try to find a new cell after detecting that a radio link failure has occurred.
2. To confirm that the UE performs a cell selection procedure when it fails to configure the physical channel(s) indicated in the CELL UPDATE CONFIRM message.

8.3.1.18.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 and cell 2 are active).
SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).
UE: CS_DCCH+DTCH_DCH (state 6-9).

Specific Message Content

For SIB type 1 message to be transmitted throughout the test, use the message titled “System Information Block type 1 (supported PLMN type is GSM-MAP)” as found in TS 34.108 clause 6, with the following exception.

Information Element	Value/remark
- T315	0

Test Procedure

Table 8.3.1.18

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	OFF	-75	-60

Table 8.3.1.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denote the initial conditions.
The UE is brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS configures its downlink transmission power settings according to column "T1" in table 8.3.1.18. The UE shall detect a radio link failure in cell 1.

Then it shall attempt to re-select to cell 2. After that, it shall transmit CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes dedicated transport and physical channel parameters on downlink DCCH. SS shall not configure according to this message. Instead, SS configures its downlink transmission power settings according to column "T0" in table 8.3.1.18. UE shall fail to establish the dedicated channel in cell 2.
UE shall re-select to cell 1 and transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure". Then SS responds with a CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0			Void	
1			Void	
2			Void	
3			Void	
4				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.18. SS starts to listen to the uplink CCCH of cell 2.
5			Void	
6				The UE detects the radio link failure.
7	→		CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
8	←		CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
9				SS does not configure according to the message in step 8. SS configures cell 1 and 2 according to column "T0" in table 8.3.1.18.
10	→		CELL UPDATE	UE shall select cell 1 and transmit this message
11	←		CELL UPDATE CONFIRM	See message content.
12	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

CELL UPDATE (Step 7)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
- S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

CELL UPDATE CONFIRM (Step 8 and 11)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
UL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
DL Transport channel information common for all transport channels	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Added or Reconfigured TrCH information list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information common for all radio links	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.
Downlink information per radio link list	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A1, A2, A7 or A8.

CELL UPDATE (Step 10)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI -SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to value assigned in cell 1. Check to see if set to value assigned in cell 1. Check to see if set to 'radio link failure'
Failure cause RB timer indicator - T314 expired - T315 expired	This IE is not Checked. FALSE TRUE

8.3.1.18.5 Test requirement

After step 6, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.
After step 9, the UE shall transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure".
After step 11, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050030

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1058 ⌘**rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF P4 IR_U 8.3.7.5
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	To correct the configuration the cell 9, GSM, to be consistent with 51.010 and the current TTCN implementation.
Summary of change:	⌘	Changes made to Message Specific contents for cell 9, GSM, to provide consistency with 51.010 and to align the prose with the TTCN implementation.
Consequences if not approved:	⌘	The prose and TTCN will be inconsistent

Clauses affected:	⌘	8.3.7.5.4

Other specs affected:	Y	N		
⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	No impact to TTCN

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

8.3.7.5.1 Definition

8.3.7.5.2 Conformance requirement

If the UE does not succeed in establishing the connection to the other target radio access technology, it shall

1> revert back to the UTRA configuration;

1> establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

…

transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "physical channel failure".

1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:

2> the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5.

8.3.7.5.3 Test purpose

To test that the UE reactivates the old configuration and uses this to transmit a HANDOVER FROM UTRAN FAILURE message to the network including IE "Inter-RAT Handover failure cause" which is set to "physical channel failure", when it receives an HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

To verify that after the handover failure the UE resumes previously configured compressed mode patterns and measurements.

8.3.7.5.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9. ~~The ARFCN value shall be according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN).~~

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,
- UE supports GSM FR,
- UE supports UTRAN AMR,
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480, GSM-PCS
- UE supports compressed mode (FDD only).

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR. If the UE requires compressed mode (refer ICS/IXIT), the SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message indicating two GSM cells of which only one is actually configured. This message is used to provide measurement control parameters (GSM RSSI) to the UE and to start compressed mode for the measurement if required according to the UE capabilities. The UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS (reporting period is 4000 ms).

The SS sends a HANDOVER FROM UTRAN COMMAND indicating a dedicated channel (not configured) of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but can not complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRAN configuration.

After the handover failure, the UE re-activates compressed mode (if configured) and resumes periodic measurement reporting including sending MEASUREMENT REPORT messages periodically to SS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into U10 state in UTRAN cell 1. If the UE does not require compressed mode (refer ICS/IXIT), then goto step 1c.
1a	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
1b	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
1c	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started if required as per UE capabilities.
1d	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM FR which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.
5a	→		MEASUREMENT REPORT	The SS shall verify that the UE resumes periodic measurement reporting for GSM RSSI measurements

Specific message contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1a)

Use the same message sub-type as in TS 34.108 titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	Undefined
- TGPL1	12
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Deactivate
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	undefined
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 0
- ITP	Mode 0
CHOICE UL/DL Mode	UL&DL or UL-only or DL-only (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

MEASUREMENT CONTROL (Step 1c)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	~~BSIC1~~ Value set to correspond with HANDOVER COMMAND IEs seen in TS 51.010 clause 26.6.5.1 M=2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	~~value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)~~ Value the same as HANDOVER COMMAND in TS 51.010 clause 26.6.5.1 M=2 (dependant on band used)
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	GSM/DCS-1800 or GSM/PCS-1900 (dependent on band used)
- BCCH ARFCN	V~~v~~alue according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOICE system	GSM
- Observed time difference to ~~to~~ GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOICE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOICE report criteria	
- Periodical reporting criteria	

- Amount of reporting	infinity
- Reporting interval	4000
Physical channel information elements	
- DPCH compressed mode status info	If the UE requires compressed mode (refer ICS/IXIT), this IE is present and contains the IEs as follows. If the UE does not require compressed mode (refer ICS/IXIT), this IE is not present.
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	Activate
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	Deactivate
- TGCFN	Not present

MEASUREMENT REPORT, if the UE requires compressed mode (refer ICS/IXIT) (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see ~~3GPP 34.123-1 table 6.5 for details on the ARFCN~~ HANDOVER COMMAND in TS 51.010 Clause 26.6.5.1 M=2)
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT REPORT, if the UE doesn't requires compressed mode (refer ICS/IXIT) (Step 1d and step 5a)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOICE BSIC	verified BSIC
- Inter-RAT cell id	Check that is set to 0
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to the correct value according to the GSM band under test (see 3GPP 34.123-1 table 6.5 for details on the ARFCN)
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-system message - System type - Frequency Band - CHOICE GSM message - Message	 GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as BIT STRING (1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1 and that the indicated target channel for GSM FR does not exist in the GSM cell

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9.

8.3.7.5.5 Test requirement

After step 4 the SS shall receive HANDOVER FROM UTRAN FAILURE message using the old UTRA configuration.

After step 5 the UE shall correctly report the GSM RSSI value.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050041

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1060 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 RAB test case 14.4.2a
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The Poll_SDU value in the Specific Message Content for Radio Bearer Setup message is inconsistent with 34.108 clause 9.
Summary of change:	⌘	The Poll_SDU value in the Specific Message Content for Radio Bearer Setup message has been changed from 4 to 1.
Consequences if not approved:	⌘	The prose will be inconsistent with 34.108.

Clauses affected:	⌘	14.4.2a

Other specs affected: ⌘

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

⌘

Other comments: ⌘ No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14.4.2a Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2a.
This radio bearer configuration is tested with three different SYSTEM INFORMATION (BCCH) configurations:

1. The contents of System Information Block type 5 shall be as per the message specific content.

   Two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

   This configuration is verified in test case 14.4.2a.1.

2. The contents of System Information Block type 5 as specified in TS 34.108, clause 6.1.3.

   Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.

   This configuration is verified in test case 14.4.2a.2.

3. The contents of System Information Block type 5 and 6 as specified in TS 34.108, clause 6.1.2.

   Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

   This configuration is verified in test case 14.4.2a.3.

Specific Message Content for Radio Bearer Setup message to be used for these test cases:
Use the RADIO BEARER SETUP message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
- RAB information for setup	
- RAB info	(AM DTCH for PS domain)
- RAB identity	0000 0101B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	20
- PDCP Info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	14
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	7
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present

Information Element	Value/remark
- Logical channel identity	7
- RAB identity	0000 0110B The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.
- CN domain identity	PS domain
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	useT315
- RB information to setup	
- RB identity	24
- PDCP info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	14
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	
- Information for each multiplexing option	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	10
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	10
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	10

14.4.2a.1 One SCCPCH: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.1.1 Conformance requirement

See 14.2.4.1.

14.4.2a.1.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2a and 6.10.2.4.4.2 for the case when two SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and the second SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.
To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2a.1.3 Method of Test

The contents of System Information Block type shall be as per the specific message content below.
See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TFI	**RB7+RB8+SRB (2x32 kbps on RACH)**
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	**RB7 + RB8**
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	**RB7 + RB8 (2x32 kbps)**
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	**(SRB, RB7+RB8)**
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

Specific Message Contents

Use the default parameter values for the system information block 5 with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions

Information Element	Value/remark
- SIB6 indicator	FALSE

14.4.2a.1.4 Test Requirements

See 14.1.1 for definition of step 15

1. At step 15 the UE transmitted transport format shall be TF1 (1x360).
2. At step 15 the UE shall return
   - for sub test 1: an RLC SDU on RB7 having the same content as sent by SS
   - for sub test 2: an RLC SDU on RB8 having the same content as sent by SS

14.4.2a.2Two SCCPCHs: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.2.1 Conformance requirement

See 14.2.4.1.

14.4.2a.2.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.2 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH and both the second and third SCCPCHs carry the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH.
To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2a.2.3 Method of Test

The contents of System Information Block type 5 shall be as specified in TS 34.108, clause 6.1.3.
See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TFI	RB7 + RB8 (2x32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7 + RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 + RB8 (2x32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7+RB8)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.4.2a.2.4 Test Requirements

See 14.1.1 for definition of step 15

1. At step 15 the UE transmitted transport format shall be TF1 (1x360).
2. At step 15 the UE shall return
   - for sub test 1: an RLC SDU on RB7 having the same content as sent by SS
   - for sub test 2: an RLC SDU on RB8 having the same content as sent by SS

1.1.1.1 14.4.2a.3 One SCCPCH/connected mode: Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH

14.4.2a.3.1 Conformance requirement

See 14.2.4.1.

14.4.2a.3.2 Test purpose

To verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clauses 6.10.2.4.3.2 and 6.10.2.4.4.2 for the case when three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for two Interactive/Background 32 kbps PS RABs and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.
To be able to test the downlink radio bearer using the UE loopback function, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.4.2 (Interactive/Background 32 kbps PS RAB + Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH on PRACH) is used in uplink.

14.4.2a.3.3 Method of Test

The contents of System Information Block type 5 and 6 shall be as specified in TS 34.108, clause 6.1.2.
See 14.1.1 for test procedure.

NOTE The test procedure for single radio bearer configurations is used as there are no uplink transport format combination for simultaneous data transmission on the PS radio bearers, nor any transport format combination for simultaneous data transmission and signalling.

Uplink TFS:

	TFI	RB7+RB8+SRB (2x32 kbps on RACH)
TFS	TF0, bits	1x168
	TF1, bits	1x360

Uplink TFCS:

TFCI	RB7 + RB8
UL_TFC0	TF0
UL_TFC1	TF1

Downlink TFS:

		SRBs	RB7 + RB8 (2x32 kbps)
TFS	TF0, bits	0x168	0x360
	TF1, bits	1x168	1x360
	TF2, bits	2x168	N/A

Downlink TFCS:

TFCI	(SRB, RB7+RB8)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: 312 bits RB8: No data
2	DL_TFC3	UL_TFC1	DL_TFC0, UL_TFC0	UL_TFC1, UL_TFC0	RB7: 312 bits RB8: 312 bits	RB7: No data RB8: 312 bits

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB7 and RB8: Test data size has been set to the payload size of the DL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit). The UL RLC SDU size paramater has been set to the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).

14.4.2a.3.4 Test Requirements

1. At step 15 the UE transmitted transport format shall be TF1 (1x360).
2. At step 15 the UE shall return
   - for sub test 1: an RLC SDU on RB7 having the same content as sent by SS
   - for sub test 2: an RLC SDU on RB8 having the same content as sent by SS

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050136

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1077 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to MAC test cases 7.1.3.2
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

1. Current expansion in uplink to 50 UL SDUs cause uplink SDU size to exceed the 1500 byte limit in SM.
2. Clarification to test procedure needed.
3. Clarification to the test requirement is needed.

Summary of change: ⌘

1. Test method changed from sending 2 instead of 1 SDU in downlink and decrease the test loop's UL SDU size to from 50 to 25 UL PDUs (thus reducing the UL SDU size from 2000 bytes to 1000 bytes).
2. Changes to method of test
   a. Editorial corrections to the selected radio bearer configuration
   b. Added note explaining the background for the selected radio bearer combination.
   c. Changed references to "AM_7_PayloadSize" to "RB5_PayloadSize" and "RB6_PayloadSize" respectively.
3. Clarified test requirements 3 and 6.

Consequences if not approved: ⌘ Ambiguities remains.

Clauses affected: ⌘ 7.1.3.2

		Y	N		
Other specs	⌘		X	Other core specifications	⌘

affected:		Test specifications O&M Specifications
Other comments:	⌘	Affects Rel 99, Rel4 and Rel5 UEs.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.3.2 TFC Selection

7.1.3.2.1 Definition and applicability

All UEs

7.1.3.2.2 Conformance requirement

Before selecting a TFC, i.e. at every boundary of the shortest TTI, or prior to each transmission on PRACH the set of valid TFCs shall be established. All TFCs in the set of valid TFCs shall:

1. belong to the TFCS.

1a. not be restricted by higher layer signalling (e.g. TFC Control, see [7]).

2. not be in the Blocked state.

3. be compatible with the RLC configuration.

4. not require RLC to produce padding PDUs (see [6] for definition).

5. not carry more bits than can be transmitted in a TTI (e.g. when compressed mode by higher layer scheduling is used and the presence of compressed frames reduces the number of bits that can be transmitted in a TTI using the Minimum SF configured).

[...]

The chosen TFC shall be selected from within the set of valid TFCs and shall satisfy the following criteria in the order in which they are listed below:

1. No other TFC shall allow the transmission of more highest priority data than the chosen TFC.

2. No other TFC shall allow the transmission of more data from the next lower priority logical channels. Apply this criterion recursively for the remaining priority levels.

3. No other TFC shall have a lower bit rate than the chosen TFC.

In FDD mode the above rules for TFC selection in the UE shall apply to DCH, and the same rules shall apply for TF selection on RACH and CPCH.

[...]

Reference(s)

TS 25.301 clause 5.3.1.2.

TS 25.321, clause 11.4.

7.1.3.2.3 Test purpose

1. To verify that the UE supports a TFCS that does not allow simultaneus transmission of max data rate on all transport channels.

2. To verify that the UE selects a TFC according to the rule that no other TFC shall allow the transmission of more highest priority data than the chosen TFC.

3. To verify that the UE selects a TFC according to the rule that no other TFC shall allow the transmission of more data from the next lower priority logical channels.

7.1.3.2.4 Method of test

Initial conditions

System Simulator:

- 1 cell, default parameters, Ciphering Off.

User Equipment:

- The UE shall operate under normal test conditions, Ciphering Off.
- The Test-USIM shall be inserted.

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS 34.108) is executed, with all the parameters as specified in the procedure, with the following exceptions:

A radio bearer configuration for "Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:13.6 DL:13.6 kbps SRBs for DCCH" is configured. This is a~~A~~ modified version of the radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.58 for "Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:16 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" RAB with the following modifications~~is configured as specified in the following~~:

NOTE This radio bearer configuration has been selected to provide for a representative test scenario for how UTRAN configures the TFCS such that the data rate can be increased on one transport channel when there is no (or low) activity on the other transport channels, e.g. to provide for improved signalling performance (13.6 kbps) when there is no data transmitted.

Uplink Transport channel parameters for Streaming / unknown / UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		16000
	AMD PDU header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
	TTI, ms		20
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		1068
	Uplink: Max number of bits/radio frame before rate matching		534
	RM attribute		135-175

Uplink Transport channel parameters for Interactive or background / UL:16 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		16000
	AMD PDU header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		2124
	Uplink: Max number of bits/radio frame before rate matching		531
	RM attribute		135-175

Uplink Transport channel parameters for UL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB		**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
	User of Radio Bearer		RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type		DCCH	DCCH	DCCH	DCCH
	RLC mode		UM	AM	AM	AM
	Payload sizes, bit		136	128	128	128
	Max data rate, bps		13600	12800	12800	12800
	AMD/UMD PDU header, bit		8	16	16	16
MAC	MAC header, bit		4	4	4	4
	MAC multiplexing		4 logical channel multiplexing			
Layer 1	TrCH type		DCH			
	TB sizes, bit		148 (alt 0, 148)			
	TFS	TF0, bits	0x148 (alt 1x0)			
		TF1, bits	1x148			
		TF2, bits	2x148			
		TF3, bits	4x148			
	TTI, ms		40			
	Coding type		CC 1/3			
	CRC, bit		16			
	Max number of bits/TTI before rate matching		~2064			
	Uplink: Max number of bits/radio frame before rate matching		~516			
	RM attribute		155-185			

Uplink TFCS

TFCS size	15
TFCS	(Streaming RAB, Interactive RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF0,TF1,TF0), (TF0,TF2,TF0), (TF1,TF1,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF1,TF0,TF2), (TF1,TF0,TF3), (TF0,TF1,TF1), (TF0,TF1,TF2), (TF0,TF1,TF3), (TF1,TF1,TF1), (TF0,TF0,TF2), (TF0,TF0,TF3)

Uplink Physical channel parameters

DPCH Uplink	Min spreading factor	32
	Max number of DPDCH data bits/radio frame	1200
	Puncturing Limit	1.0

Downlink Transport channel parameters for Streaming / unknown / DL:64 kbps / PS RAB

Higher layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		640
	Max data rate, bps		64000
	AM PDU header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		656
	TFS	TF0, bits	0x656
		TF1, bits	1x656
		TF2, bits	2x656
		TF3, bits	4x656
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8076
	RM attribute		125-165

Downlink Transport channel parameters for Interactive or background / DL:64 kbps / PS RAB

Higher Layer	RAB/Signalling RB		**RAB**
RLC	Logical channel type		DTCH
	RLC mode		AM
	Payload sizes, bit		320
	Max data rate, bps		64000
	AMD PDU header, bit		16
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	TB sizes, bit		336
	TFS	TF0, bits	0x336
		TF1, bits	1x336
		TF2, bits	2x336
		TF3, bits	4x336
		TF4, bits	8x336
	TTI, ms		40
	Coding type		TC
	CRC, bit		16
	Max number of bits/TTI after channel coding		8460
	RM attribute		135-175

Downlink Transport channel parameters for DL:13.6 kbps SRBs for DCCH

Higher layer	RAB/signalling RB		**SRB#1**	**SRB#2**	**SRB#3**	**SRB#4**
	User of Radio Bearer		RRC	RRC	NAS_DT High prio	NAS_DT Low prio
RLC	Logical channel type		DCCH	DCCH	DCCH	DCCH
	RLC mode		UM	AM	AM	AM
	Payload sizes, bit		136	128	128	128
	Max data rate, bps		13600	12800	12800	12800
	AMD/UMD PDU header, bit		8	16	16	16
MAC	MAC header, bit		4	4	4	4
	MAC multiplexing		4 logical channel multiplexing			
Layer 1	TrCH type		DCH			
	TB sizes, bit		148 (alt 0, 148) (note)			
	TFS	TF0, bits	0x148 (alt 1x0) (note)			
		TF1, bits	1x148			
		TF2, bits	2x148			
		TF3, bits	4x148			
	TTI, ms		40			
	Coding type		CC 1/3			
	CRC, bit		16			
	Max number of bits/TTI before rate matching		2064			
	RM attribute		155-230			
NOTE: alternative parameters enable the measurement "transport channel BLER" in the UE.						

Downlink TFCS

TFCS size	22
TFCS	((Streaming RAB, Interactive RAB, DCCH)= (TF0,TF0,TF0), (TF1,TF0,TF0), (TF2,TF0,TF0), (TF3,TF0,TF0), (TF0,TF1,TF0), (TF1,TF1,TF0), (TF2,TF1,TF0), (TF3,TF1,TF0), (TF0,TF2,TF0), (TF0,TF3,TF0), (TF0,TF4,TF0), (TF0,TF0,TF1), (TF1,TF0,TF1), (TF2,TF0,TF1), (TF3,TF0,TF1), (TF0,TF1,TF1), (TF1,TF1,TF1), (TF2,TF1,TF1), (TF3,TF1,TF1), (TF0,TF0,TF2), (TF3, TF0, TF2), (TF0,TF0,TF3)

Downlink Physical channel parameters

DPCH Downlink	DTX position		Flexible
	Spreading factor		32
	DPCCH	Number of TFCI bits/slot	8
		Number of TPC bits/slot	4
		Number of Pilot bits/slot	8
	DPDCH	Number of data bits/slot	140
		Number of data bits/frame	2100

The logical channel priorities are set according to the following:

Radio Bearer	**Logical Channel Priority**
RB1 (DCCH)	3
RB2 (DCCH)	3
RB3 (DCCH)	4
RB4 (DCCH)	5
RB 5 (streaming/unknown)	2
RB 6 (Interactive/ background)	7

Let AM_7_PayloadSize denote the RAB payload size in octets.

Related ICS/IXIT Statement(s)

None

Test procedure

In the following, the Streaming/ unknown radio bearer is denoted RB 5, ~~and~~ the Interactive/ background radio bearer is denoted RB 6, the payload size for RB5 is denoted RB5_PayloadSize and the payload size for RB6 is denoted RB6_PayloadSize.

a) The SS closes the test loop using UE test loop mode 1 with the UL SDU size set to (~~AM_7~~ RB5_PayloadSize * 25~~50~~) - 1 bytes for RB5 and to (RB6_PayloadSize * 25) - 1 bytes for RB6. See note 1.

b) The SS transmits a MEASUREMENT CONTROL message requesting periodic reporting with a period of 250ms.

c) The SS sends two~~one~~ RLC SDUs of size floor (~~AM_7~~RB6_PayloadSize) - 1 bytes to the UE on RB 6. The UE is expected to loop this data back in two~~one~~ RLC SDUs, segmented into a total of 50 RLC PDUs.

d) The SS checks that data is returned in uplink

e) The SS waits until a measurement report is received and checks that the UE transmits the measurement report and data on RB6 simultaneously using a TFC that maximises the data rate for the SRB.

f) The SS waits until the UE has looped back all data

g) The SS sends ~~one~~two RLC SDUs of size floor (~~AM_7~~RB5_PayloadSize) - 1 bytes to the UE on RB 5. The UE is expected to loop this data back in ~~one~~two RLC SDU, segmented into a total of 50 RLC PDUs.

h) The SS sends ~~one~~two RLC SDUs of size floor (AM_7_PayloadSize) - 1 bytes to the UE on RB 6. The UE is expected to loop this data back in ~~one~~two RLC SDUs, segmented into a total of 50 RLC PDUs.

i) The SS checks that data is returned in uplink on RB5 and RB6 simultaneously.

j) The SS waits until a measurement report is received and checks that during the reception of the measurement report, data is also received on RB5 but not on RB6.

Note 1. Having UE to return 50 PDUs corresponds to 50*TTI (20 ms) = 1 second of continous data transmission. As the periodic measurement interval is 250ms this will guarantee that data transmission will be interupted by transmission of measurement reports in uplink. To keep the uplink SDU size below the limit (1500 octets) of the Max SDU size parameter associated with PDP context establishment then two downlink PDUs is used to generate the 50 uplink PDUs (uplink SDU size= 1000 octets).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		ACTIVATE RB TEST MODE (DCCH)	TC
2	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
3	<--		RADIO BEARER SETUP (DCCH)	RRC
4	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
5	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 with UL RLC SDU size parameter for RB5 and RB6 set to achieve UE to transmit 50 PDUs in uplink.
6	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
7	<--		MEASUREMENT CONTROL (DCCH)	SS sends a MEASUREMENT CONTROL message requesting periodic reporting at 250 ms interval.
8	<--		2 x Downlink RLC PDU on RB6	SS sends ~~a~~two SDUs fit into ~~one~~two PDUs on RB6.
9	-->		Uplink RLC PDUs	SS starts receiving RLC PDUs from the UE on RB6
10	-->		MEASUREMENT REPORT (DCCH)	SS checks that at least one MEASUREMENT REPORT message is received within 500 ms (=2 x reporting interval) simultaneous with RB 6 data.
11	-->		Uplink RLC PDUs	SS checks that UE continues returning RLC PDUs on RB6
12	<--		2 x Downlink RLC PDU on RB5	SS sends ~~a~~two SDUs fit into ~~one~~two PDUs on RB5.
13	<--		2 x Downlink RLC PDU on RB6	SS sends ~~a~~two SDUs fit into ~~one~~two PDUs on RB6.
14	-->		Uplink RLC PDUs	SS starts receiving RLC PDUs from the UE on RB5 and RB6
15	-->		MEASUREMENT REPORT (DCCH) and simultaneous data on RB5 and RB6	SS checks that at least one MEASUREMENT REPORT message is received within 500 ms (=2 x reporting interval) simultaneous with RB 5 data.
16	-->		Uplink RLC PDUs	SS continues receiving RLC PDUs from the UE on RB5 and RB6

7.1.3.2.5 Test requirements

1. After step 8 the UE shall loopback data on RB6 using the transport format that carries the maximum amount of data (2 PDUs per TTI)
2. After step 10 the UE shall transmit a MEASUREMENT REPORT message within 500 ms.
3. After step 10 and ~~D~~during the reception of the MEASUREMENT CONTROL, data shall also be received on RB6
4. After step 13, the UE shall loopback data simultaneously on RB5 and RB6 using a TFC that carries data for both transport channels.
5. After step 15 the UE shall transmit a MEASUREMENT REPORT message within 500 ms
6. After step 15 and ~~D~~during the reception of the MEASUREMENT REPORT the UE shall simultaneously transmit data on RB5 but not on RB6

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Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050137

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1078 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to MAC-hs test cases 7.1.5.2
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	24/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Radio bearer configuration used in MAC-hs test case 7.1.5.2 is not specified.
Summary of change:	⌘	1. Reference to radio bearer configuration in 34.108 clause 6.11.4a.1 "5 x Interactive or background / UL: 8 kbps DL: [max bit rate depending on UE category] / UM PS RAB" added. 2. The downlink SDU size and uplink RLC SDU size is changed from 39 to 40 bytes to adopt to the UM PS RAB in 34.108 clause 6.11.4a.1 (UMD PDU header size is 1 byte shorter than the AMD PDU header size)
Consequences if not approved:	⌘	Details fo radio bearer configuration remians unspecified.

Clauses affected:	⌘	7.1.5.2			
Other specs affected:	⌘	Y / N	Other core specifications	⌘	34.108 (T1-050239)
		N / X			
		X /	Test specifications		
		/ X	O&M Specifications		
Other comments:	⌘				

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.5.2 MAC-hs priority queue handling

7.1.5.2.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.2.2 Conformance requirement

Reordering Queue distribution:

The reordering queue distribution function routes the MAC-hs PDUs to the correct reordering buffer based on the Queue ID.

[...]

The HARQ process processes the Queue ID in the received MAC-hs PDUs. The UE shall:

- arrange the received MAC-hs PDUs in queues based on the Queue ID.

[...]

7.1.5.2.3 Test purpose

1. To confirm that the UE handles several priority queues, where different radio bearers are mapped to different queues.

7.1.5.2.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters, Ciphering Off.

User Equipment:

The SS follows the procedure in TS 34.108 7.4.2.6 (Mobile Terminated) so that the UE shall be in state BGP 6-17 (PS-DCCH + DTCH HS-DSCH). A radio bearer configuration is configured according to TS 34.108 clause 6.11.4a.1 with the ~~following~~logical channel, transport channel and queue identities set to:

Logical Channel ID	MAC-d flow (DL) / TrCH ID (UL)	Queue ID	Comment
1	1	0	RB5
2	1	0	RB6
3	2	1	RB7
4	2	2	RB8
5	3	3	RB9
NOTE 1: LCH 1-2 emulates logical channels with the same priority whereas LCH 3-4 emulates logical channels with different priorities. NOTE 2: The radio bearer numbers refer to the radio bearers as specified in TS 34.108 clause 6.11.4a.1.			

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 40~~39~~ octets for each radio bearer.

Test procedure

In this test procedure each MAC-hs PDU contains one RLC PDU carrying one SDU of size 40~~39~~ octets and one length indicator indicating the end of the SDU.

a) The SS transmits a MAC-hs PDU where:

1. The TSN = 0
2. The Queue ID = 0
3. The MAC-hs PDU contains an RLC PDU with SN=0.

b) The SS checks that the RLC PDU with SN=0 is looped back and checks that the transport channel and logical IDs are correct.

c) The SS repeats steps a), b) with the Logical channel ID and Queue ID field set as follows:

Iteration	Logical Channel ID	Queue ID Value
1	1	0
2	2	0
3	3	1
4	4	2
5	5	3

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		MAC-hs PDU with TSN=0 containing an RLC PDU with SN = 0. The Logical channel ID and Queue ID are set according to the table above.	
2	→		RLC PDU with SN 0	

Steps 1 to 2 of the expected sequence are repeated for iteration 2-5.

7.1.5.2.5 Test requirements

1. In step 2, for each iteration, the RLC PDU with SN=0 shall be looped back with the transport channel and logical channel ID as specified by the table below:

Iteration	Logical Channel ID	Transport Channel ID
1	1	1
2	2	1
3	3	2
4	4	2
5	5	3

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Bangalore, 31th January – 4th February 2005

T1-050205r1 ⌘

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CHANGE REQUEST

⌘ **34.123-1** **CR** 1135 ⌘ **rev** - ⌘ Current version: **5.10.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to TS 34.123-1 v5.a.0 - Correction to GCF P3 Test Case 8.3.2.12
Source:	⌘	Panasonic, MCC 160, Motorola, Nokia
Work item code:	⌘	TEI
Date:	⌘	16/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	With Qrxlevmin equals to –79 dBm (see T1-041532, approved in T1#25), cell with CPICH Ec set to –79dBm no longer satisfies S criterion, even though that is not the intended situation. Note: Srxlev = -79 - (-79) = 0. In the case of TC 8.3.2.12, this could cause the UE to detect "out-of-service" condition in cell 1 12 seconds after step 2 (refer to TS 25.133 clause 4.2.2.1), consequently making a conformant UE to fail the post-amble (step 4).
Summary of change:	⌘	TC 8.3.2.12 1) The power level of Cell 1 at time instant T1 is changed to -73dBm, so that Srxlev (= 6dBm) > 0. 2) The power level of Cell 2 at time instant T1 is increased to -67dBm. Note: TDD part is not modified.
Consequences if not approved:	⌘	A conformant UE might fail this test case.

Clauses affected:	⌘	8.3.2.12

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	This CR is a revised version of T1-050205

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of Modification>

8.3.2.12 Restricted cell reselection to a cell belonging to forbidden LA list (URA_PCH)

8.3.2.12.1 Definition

8.3.2.12.2 Conformance requirement

1. A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

   - URA reselection:

     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

     - if the list of URA identities in system information block type 2 is empty; or

     - if the system information block type 2 can not be found:

       - perform URA update using the cause "change of URA".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred, see clause 5.3.1 in TS 25.304.

   - The cell is not part of the list of "forbidden LAs for roaming" in TS 22.011.

   - The cell selection criteria are fulfilled, see clause 5.2.3.1.2 in TS 25.304.

3. The Mobile Equipment shall contain a list of "forbidden location areas for roaming", as well as a list of "forbidden location areas for regional provision of service". These lists shall be erased when the MS is switched off or when the SIM is removed, and periodically (with period in the range 12 to 24 hours). The location area identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a location update reject message is received with the cause "Roaming not allowed in this location area" or with the cause "Location Area not allowed". The lists shall accommodate each 10 or more location area identifications. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.2.12.3 Test purpose

1. To confirm that the UE refrains from selects a UTRA cell and performs a URA update if that cell has a LA identity that is part of the list of LAs stored in the UE as "forbidden location areas for roaming".

NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

8.3.2.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.12-1, while cell 2 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored LA-ID 2 into the list of "forbidden location areas for roaming". The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.12-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
URA identity		URA-ID 1		URA-ID 2	
LA identity		LA-ID 1		LA-ID 2	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-73	-73~~79~~	Cell 2 is switched off	-67~~73~~
P-CCPCH RSCP (TDD)	dBm	-62	-68	Cell 2 is switched off	-62

Table 8.3.2.12-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while column marked "T1" are to be applied subsequently.

a) At T1, verify that the UE does not reselect to cell 2 and not send a URA update in cell 2, although cell 2 is the best cell.

b) SS calls for generic procedure C.5 to check that UE is in URA_PCH state in cell 1.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in URA_PCH state, camped on Cell 1 and registered to PLMN1. SS applies downlink transmission power settings according to values in column "T0" of table 8.3.2.12-1.
2				SS applies downlink transmission power settings according to values in column "T1" of table 8.3.2.12-1.
3				SS monitors that the UE does not send a URA UPDATE message or any other message.
4	←→		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state in cell 1, the test passes, otherwise it fails.

Specific Message Contents

-

8.3.2.12.5 Test requirement

After Step 2 the UE shall refrain from sending a URA UPDATE (or any other message).

<End of Modification>

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050407

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1103 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

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Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 RRC test case 8.3.1.31 (Revision of T1-050004)
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	In step 1a, message specific Content for MASTER INFORMATION BLOCK (Step 1a), the Cell Value tag for SIB3 and 4 should be modified to be consistent with value used in TTCN. The requirement in this step is to ensure that a different Cell value tag is used compared to the previous transmission of the same SIB, it is recommended that this IE should not have a specific value in the prose, but to state that it should be different from the previous Cell value tag.
Summary of change:	⌘	In clause 8.3.1.31.4, message specific Content for MASTER INFORMATION BLOCK (Step 1a), the Cell Value tag for SIB3 and 4 have been changed from 2 to a statement describing that the value used must be different from the previous Cell Value tag.
Consequences if not approved:	⌘	The prose will not be consistent with the TTCN.

Clauses affected:	⌘	8.3.1.31.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1.31 Cell Update: re-entering of service area from URA_PCH after T316 expiry but before T317 expiry

8.3.1.31.1 Definition

8.3.1.31.2 Conformance requirement

If the UE detects the "out of service area" and the UE is in URA_PCH or CELL_PCH state it shall perform the following actions:

1> start timer T316;

1> perform processes described in subclause 7.2.2.

….

In the URA_PCH or CELL_PCH state the UE shall perform the following actions:

NOTE: Neither DCCH nor DTCH are available in these states.

1> if the UE is "in service area":

….

1> if the UE is "out of service area":

2> perform cell selection process as specified in [4];

2> run timer T316;

2> run timer T305.

….

On T316 expiry the UE shall perform the following actions. The UE shall:

1> if "out of service area" is detected:

2> start timer T317;

2> move to CELL_FACH state;

2> perform processes described in subclause 7.2.2.

1> if "in service area" is detected:

….

If the UE detects "in service area" before T317 expiry the UE shall perform the following actions. If no cell update procedure or URA update procedure is ongoing, the UE shall:

1> stop T317;

1> if T307 is active:

2> stop T307.

1> initiate the cell update procedure using as cause "Re-entering service area" as specified in subclause 8.3.1;

1> perform processes described in subclause 7.2.2.

If a cell update procedure or URA update procedure is ongoing, the UE shall:

1> stop T317;

1> perform the actions as specified in 8.3.1.

Reference

3GPP TS 25.331 clause 8.3.1, 8.5.5.1.1, 8.5.5.2.2, 8.5.5.3, 7.2.2.1, and 7.2.2.2.

8.3.1.31.3 Test purpose

To confirm that the UE executes a cell update procedure when the UE re-enters the service area before the expiry of timer T317, after expiry of T316.

8.3.1.31.4 Method of test

Initial Condition

System Simulator: 1 cell with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.1.31.
UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 in the list of URA-ID.

Test Procedure

Table 8.3.1.31

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.31 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.
The UE is initially in URA_PCH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. The SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.31 so that S<0. When the UE detects that it is out of service area, it will start T316 and search for a cell to camp. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.31 within a time equivalent to T316+T317 but larger than T316, so that S>0. The UE shall detect that it returns back in service area before T317 expires. Since the UE has moved to CELL_FACH state on expiry of T316, it shall now transmit a CELL UPDATE message which contains the value "re-entering service area" in IE "Cell update cause" to the SS on the uplink CCCH. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IE "new C-RNTI", and "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts operating from URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"

		void	
		void	
2			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.31 such that the cell 1 is no longer suitable for camping i.e. S<0.
3			The UE shall detect a "out of service area" condition, start T316. The UE shall start T317 on expiry of T316)
4			60 seconds after step 2 (see note 1), the SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.31 before T317 expires.
5	→	CELL UPDATE	Value "re-entering service area" shall be set in IE "Cell update cause"
6	←	CELL UPDATE CONFIRM	
7	→	UTRAN MOBILITY INFORMATION CONFIRM	

NOTE: The 60 seconds in step 4 should be large enough for any UE to have detected the out of service area condition (Nserv consecutive DRX cycles + 12s) and have started T317 after T316 expiry (default=30s), but well before T317 expiry (default = 180s).

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
MIB Tag	2
Scheduling information	- Scheduling info for System Information Type 3
- Cell Value tag	~~2~~a value that is different from the previous Cell value tag
Scheduling information	- Scheduling info for System Information Type 4
- Cell Value tag	~~2~~a value that is different from the previous Cell value tag

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
Qrxlevmin	-70

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	2
BCCH modification time	Not present

CELL UPDATE (Step 5)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 're-entering service area'

CELL UPDATE CONFIRM (Step 6)

Use the same message sub-type found in TS 34.108 clause 9, with the exception of the following IEs:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0101 0101'
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

The same message found in TS 34.108 clause 9 shall be transmitted by the UE.

8.3.1.31.5 Test requirement

After step 2 the UE shall detect that it is out of service area and shall not send a URA UPDATE on the uplink CCCH channel.
After step 4 the UE shall transmit a CELL UPDATE message which sets value "re-entering service area" into IE "Cell update cause".
After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

3GPP TSG-T WG1 Meeting #26
Bangalore, India, Jan 31st- Feb 4th, 2005

Tdoc ⌘T1-050412

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1106** ⌘**rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1 Rel-5; Corrections to RRC test cases on seamless SRNS relocation (revision of T1-050084)
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	01/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘

Some conformance requirements need to be corrected.

At hard handover combined with SRNS relocation, the target RNC does not know the timing of the source cell. Since the target RNC assembles the reconfiguration message the only safe way to perform this hard handover is with timing re-initialised.

At SRNS relocation the RLC entities are always re-established and ciphering of the each RLC entity is initialised using the HFN, which then is incremented. Therefore, the IE “Radio bearer downlink ciphering activation time info” (with RLC sequence numbers) is not used by the UE and should not be included in the message sent to the UE at relocation (even if the ciphering algorithm was changed).

Handling of integrity protection during SRNS relocation is important, and therefore it should be included as part of the test purpose.

The IE “Ciphering mode info” is only sent when the ciphering algorithm is changed. This needs to be clarified in the test case.

Other minor errors in the test cases exist.

Summary of change: ⌘

Test case 8.2.6.43:

Minor errors in the conformance requirements corrected.
Conditions for CS for the PHYSICAL CHANNEL RECONFIGURATION message

		are corrected. The PHYSICAL CHANNEL RECONFIGURATION message is changed to use timing re-initialised hard handover. As a consequence, for the CS domain case, the IE “Ciphering activation time for DPCH” should not be present since that will cause an unspecified UE behaviour when used together with timing re-initialised hard handover. Also, the IE “Activation time” is changed to “Not present”. Inclusion of the the “Ciphering mode info” in the PHYSICAL CHANNEL RECONFIGURATION message is clarified. The IE “Radio bearer downlink ciphering activation time info” is set to “Not present”. In the CS domain case the UE will include the IE “COUNT-C activation time” in the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. In the test requirements, the handling of integrity protection has been added. Test case 8.3.3.3: Minor errors in the conformance requirements corrected. Handling of integrity protection during SRNS relocation has been added to the test purpose. Inclusion of the the “Ciphering mode info” in the UTRAN MOBILITY INFORMATION message is clarified. The IE “Radio bearer downlink ciphering activation time info” is set to “Not present”. In the CS domain case the UE will include the IE “COUNT-C activation time” in the UTRAN MOBILITY INFORMATION CONFIRM message. In the test requirements, the handling of integrity protection has been added.
Consequences if not approved:	⌘	Inconsistency with the core specification. Compliant UE will fail the test.

Clauses affected:	⌘	8.2.6.43, 8.3.3.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Affects R99, Rel-4 and Rel-5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.6.43 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Seamless SRNS relocation with pending of ciphering)

8.2.6.43.1 Definition

8.2.6.43.2 Conformance requirement

<from sub-clause 8.2.2.32>

If the UE receives:

- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

…

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

…

2> if the variable PDCP_SN_INFO is empty:

3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

2> else:

…

2> re-establish the RLC entity for RB2;

2> for the downlink and the uplink, apply the ciphering configuration as follows:

3> if the received re-configuation message included the IE "Ciphering Mode Info":

4> use the ciphering configuration in the received message when transmitting the response message.

3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:

4> if the previous SECURITY MODE COMMAND was received due to new keys being received:

5> consider the new ciphering configuration to include the received new keys;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in TS 25.331 subclause 8.1.12.3.1.

4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;

5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.

4> apply the new ciphering configuration immediately following RLC re-establishment.

3> else:

4> continue using the current ciphering configuration.

2> set the new uplink and downlink HFN of RB2 to MAX(uplink HFN of RB2, downlink HFN of RB2);

2> increment by one the downlink and uplink HFN values for RB2;

2> calculate the START value according to TS 25.331 subclause 8.5.9;

2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".

<from sub-clause 8.6.3.4>

1> for the downlink and the uplink, apply the new ciphering configuration as follows:

2> if the ciphering configuration for a AM or UM radio bearer or signalling radio bearer from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the current received message includes the IE "DL Counter Synch Info" or the current received message is a RADIO BEARER RECONFIGURATION message and includes the IE "New U-RNTI":

3> if the previous SECURITY MODE COMMAND was received due to new keys being received:

4> consider the new ciphering configuration to include the received new keys.

3> else if the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

4> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN.

2> apply the new ciphering configuration in uplink and downlink immediately following RLC re-establishment.

2> if the IE "Ciphering activation time for DPCH" is present in the IE "Ciphering mode info" and the UE was in CELL_DCH state prior to this procedure:

3> for radio bearers using RLC-TM:

4> apply the old ciphering configuration for CFN less than the number indicated in the IE "Ciphering activation time for DPCH";

…

2> if the IE "Radio bearer downlink ciphering activation time info" is present:

3> apply the following procedure for each radio bearer and signalling radio bearers using RLC-AM or RLC-UM indicated by the IE "RB identity":

4> suspend uplink transmission on the radio bearer or the signalling radio bearer (except for the SRB where the response message is transmitted) according to the following:

5> do not transmit RLC PDUs with sequence number greater than or equal to the uplink activation time, where the uplink activation time is selected according to the rules below.

4> select an "RLC sequence number" at which (activation) time the new ciphering configuration shall be applied in uplink for that radio bearer according to the following:

5> consider a ciphering activation time in uplink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time;

5> for each radio bearer and signalling radio bearer that has no pending ciphering activation time in uplink as set by a previous procedure changing the security configuration:

...

5> for each radio bearer and signalling radio bearer that has a pending ciphering activation time in uplink as set by a previous procedure changing the security configuration:

6> for radio bearers and signalling radio bearers except SRB2:

7> set the same value as the pending ciphering activation time.

6> for signalling radio bearer SRB2:

7> set a suitable value that would ensure a minimised delay in the change to the latest ciphering configuration.

4> store the selected "RLC sequence number" for that radio bearer in the entry for the radio bearer in the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

4> switch to the new ciphering configuration according to the following:

5> use the old ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers smaller than the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

5> use the new ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers greater than or equal to the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;

5> for a radio bearer using RLC-AM, when the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" falls below the RLC receiving window and the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" falls below the RLC transmission window, the UE may release the old ciphering configuration for that radio bearer;

5> if an RLC reset or re-establishment occurs before the activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration both in uplink and downlink immediately after the RLC reset or RLC re-establishment.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.6.3.4.

8.2.6.43.3 Test purpose

To confirm that the UE includes the previously received new keys from the last SECURITY MODE COMMAND in the new ciphering configuration in the case the ciphering configuration for RB2 from the last received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached .

8.2.6.43.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2

UE: PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.6.43

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-75	-75	-60

Table 8.2.6.43 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in the CELL_DCH state, camping onto cell 1. SS sends a new ciphering key followed by a SECURITY MODE COMMAND message (step 1) to UE. The UE shall respond with a SECURITY MODE COMPLETE message. SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.43. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message requesting the UE to do a handover combined with SRNS relocation, before the activation time indicated in step 1 lapsed. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE “Downlink counter synchronisation info”, IE “Ciphering mode info”, ~~and~~ the IE “Integrity protection mode info” and the IE “Timing Indication” set to “initialise”.

UE shall reselect to cell 2 and SS verifies that the UE sends PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. This message also includes a calculated new START value according to the formula “$START_X'$ = MSB_{20} (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the neww CK_X and IK_X from step 1}) + 2”, calculated IE ”Integrity Check Info” using a new FRESH value as included in IE “Integrity protection initialisation number” in IE “Integrity protection mode info” in PHYSICAL CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

SS transmits UE CAPABILITY ENQUIRY message on the downlink DCCH using RLC-AM. The UE shall respond to downlink message with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM. SS responds with UE CAPABILITY INFORMATION CONFIRM message. SS then send IDENTITY REQUEST message on the DCCH using RLC-AM (SRB3) in order to confirm that the UE can communicate on SRB3 by using new integrity configuration and ciphering configuration. The UE shall respond with an IDENTITY RESPONSE message on the uplink DCCH using RLC-AM (SRB3).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SECURITY MODE COMMAND	
2	→		SECURITY MODE COMPLETE	
3			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.6.43.
4	←		PHYSICAL CHANNEL RECONFIGURATION	This message is sent before last ciphering activation time has elapsed and hence there is a pending ciphering activation time. New integrity protection configuration is applied on DL SRB2. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. New integrity protection configuration is applied on UL SRB2. New ciphering configuration is applied on UL SRB2 with the downlink and uplink values of the HFN component of COUNT-C for SRB2 is incremented by one.
6	←		UE CAPABILITY ENQUIRY	New ciphering configuration is applied on DL SRB2 with the same value as used in step 5.
7	→		UE CAPABILITY INFORMATION	
8	←		UE CAPABILITY INFORMATION CONFIRM	
9	←		DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3. New ciphering configuration is applied on DL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 5.
10	→		UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB3 by UE. New ciphering configuration is applied on UL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 5.

Specific Message Contents

SECURITY MODE COMMAND (Step 1) – for PS domain testing only

The contents of SECURITY MODE COMMAND message are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	UEA0 or UEA1
- Ciphering activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+50
- RB identity	2
- RLC sequence number	Current RLC SN+50
- RB identity	3
- RLC sequence number	Current RLC SN+50
- RB identity	4
- RLC sequence number	Current RLC SN+50
- RB identity	20
- RLC sequence number	Current RLC SN+50

SECURITY MODE COMMAND (Step 1) – for CS domain testing only

The contents of SECURITY MODE COMMAND message are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	UEA0 or UEA1
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+50
- RB identity	2
- RLC sequence number	Current RLC SN+50
- RB identity	3
- RLC sequence number	Current RLC SN+50
- RB identity	4
- RLC sequence number	Current RLC SN+50

PHYSICAL CHANNEL RECONFIGURATION (Step 4) – for PS domain testing only

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled “Packet to CELL_DCH from CELL_DCH in PS”, with the following exception:

Information Element	Value/remark
Ciphering mode info	This IE is present with the values of the sub IEs as stated below only if the ciphering algorithm is changed.
- Ciphering mode command	Start/restart
- Ciphering algorithm	~~UEA0 or UEA1~~Set to another algorithm than the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	Not present
~~- Radio bearer activation time~~	
~~- RB identity~~	~~1~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~2~~
~~- RLC sequence number~~	~~Current RLC SN+2~~
~~- RB identity~~	~~3~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~4~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~20~~
~~- RLC sequence number~~	~~Current RLC SN~~
Integrity protection mode info - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number	 Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH
Activation time	Not present
New U-RNTI - SRNC identity - S-RNTI	 0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information	 Not present 00 01H PS 05 00H CS 1E 01H
Downlink counter synchronisation info - RB with PDCP information list	 Not Present.
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Initialise
- MAC-d HFN initial value	Not present
- Default DPCH Offset Value	Present
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 Set to same code as used for cell 2

PHYSICAL CHANNEL RECONFIGURATION (Step 4) – for CS domain testing only

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled “Non speech ~~to CELL_DCH from CELL_DCH~~ in CS” or “Speech ~~to CELL_DCH from CELL_DCH~~ in CS”, with the following exception:

Information Element	Value/remark
Ciphering mode info	This IE is present with the values of the sub IEs as stated below only if the ciphering algorithm is changed.
- Ciphering mode command	Start/restart
- Ciphering algorithm	~~UEA0 or UEA1~~ Set to another algorithm than the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	~~(CFN+(CFN MOD 8 + 8))MOD 256~~Not present
- Radio bearer downlink ciphering activation time info	Not present
~~- Radio bearer activation time~~	
~~- RB identity~~	~~1~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~2~~
~~- RLC sequence number~~	~~Current RLC SN+2~~
~~- RB identity~~	~~3~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~4~~
~~- RLC sequence number~~	~~Current RLC SN~~
Integrity protection mode info - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number	 Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH
Activation time	Not present
New U-RNTI - SRNC identity - S-RNTI	 0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information	 Not present 00 01H PS 05 00H CS 1E 01H
Downlink counter synchronisation info - RB with PDCP information list	 Not Present.
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Initialise
- MAC-d HFN initial value	Not present
- Default DPCH Offset Value	Present
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	 Set to same code as used for cell 2

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 5) – for PS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
Uplink counter synchronisation info - RB with PDCP information list - START list	 Not present Check that this IE is present.

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 5) – for CS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
COUNT-C activation time	Check that this IE is present.
Uplink counter synchronisation info - RB with PDCP information list - START list	 Not present Check that this IE is present.

UE CAPABILITY ENQUIRY (Step 6)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 7)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 8)

Use the same message sub-type found in [9] TS 34.108 clause 9.

8.2.6.43.5 Test requirement

After step 1, UE shall transmit a SECURITY MODE COMPLETE message on the uplink DCCH using AM RLC.

After step 4, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC which includes ~~which includes~~ a calculated new START value according to the formula "$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the new CK_X and IK_X from step 1}) + 2", calculated IE "Integrity Check Info" using the new FRESH value as included in IE "Integrity protection initialisation number" in IE "Integrity protection mode info" in PHYSICAL CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. The UE, further more, shall apply the new ingerity protection configuration for the first received/sent RRC message on SRB0, SRB3, and SRB4 after receiving the PHYSICAL CHANNEL RECONFIGURATION message (i.e. immediately). For SRB2 the new integrity protection configuration shall be applied from and including the received PHYSICAL CHANNEL RECONFIGURATION message (DL) and the sent PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (UL).

After step 6, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 9, the UE shall respond with an UPLINK DIRECT TRANSFER message to SS and apply new ciphering configuration on UL SRB3.

8.3.3.3 UTRAN MOBILITY INFORMATION: Seamless SRNS relocation in CELL_DCH (without pending of ciphering)

8.3.3.3.1 Definition

8.3.3.3.2 Conformance requirement

To initiate the procedure UTRAN transmits a UTRAN MOBILITY INFORMATION message to the UE on the downlink DCCH using AM or UM RLC. In case of SRNS relocation, the message is sent using UM RLC only.

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":

2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected";

1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info":

2> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

1> if the received UTRAN MOBILITY INFORMATION message included the IE " Downlink counter synchronisation info ":

2> re-establish the RLC entity for RB2;

2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);

2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;

2> calculate the START value according to TS 25.331 subclause 8.5.9;

2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the UTRAN MOBILITY INFORMATION CONFIRM message.

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;

1> if the IE "Integrity protection mode info" was present in the UTRAN MOBILITY INFORMATION message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted UTRAN MOBILITY INFORMATION CONFIRM message.

1> if the IE "Downlink counter synchronisation info" was included in the received UTRAN MOBILITY INFORMATION message:

2> when RLC has confirmed the successful transmission of the response message:

3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;

3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;

3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;

3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS.

1> apply the new ciphering configuration as follows:

2> if the IE "Radio bearer downlink ciphering activation time info" is present:

3> apply the following procedure for each radio bearer and signalling radio bearers using RLC-AM or RLC-UM indicated by the IE "RB identity":

….

4> switch to the new ciphering configuration according to the following:

…

5> if an RLC reset or re-establishment occurs before the activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration immediately after the RLC reset or RLC re-establishment.

1> if IE "Integrity protection mode command" has the value "start" and the IE "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and this IE was not included SECURITY MODE COMMAND:

NOTE: This case is used in SRNS relocation

2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1 of TS25.331 by:

3> using the algorithm (UIA defined in TS33.102) indicated by the IE "Integrity protection algorithm" contained in the IE "Integrity protection mode info";

3> using the IE "Integrity protection initialisation number", contained in the IE "Integrity protection mode info" as the value of FRESH defined in TS33.102.

2> let RBm be the signalling radio bearer where the reconfiguration message was received and let RBn be the signalling radio bearer where the response message is transmitted;

2> prohibit transmission of RRC messages on all signalling radio bearers in the IE "ESTABLISHED_RABS" except on RB0 and the radio bearer where the response message is transmitted;

2> if for a signalling radio bearer, a security configuration triggered by a previous SECURITY MODE COMMAND is pending, due to the activation time for the signalling radio bearer not having elapsed:

3> if the previous SECURITY MODE COMMAND was received due to new keys being received:

4> consider the new integrity protection configuration to include the received new keys; and

4> initialise the HFN of the COUNT-I values of the corresponding signalling radio bearers according to subclause 8.1.12.

3> else:

4> consider the new Integrity Protection configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN associated with the previously received SECURITY MODE COMMAND; and

4> initialise the HFN of the COUNT-I values of the corresponding signalling radio bearers according to subclause 8.1.12 using the START value associated with the LATEST_CONFIGURED_CN_DOMAIN to be transmitted in the response to the current message.

2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer in the IE "ESTABLISHED_RABS" except RBm at the next received RRC message disregarding any pending activation times for the corresponding signalling radio bearer;

2> start applying the new integrity protection configuration in the downlink for signalling radio bearer RBm from and including the received configuration message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RBn from and including the transmitted response message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearers other than RBn from the first message onwards.

NOTE: The UTRAN should ignore the information included in the IE "Uplink integrity protection info".

Reference

3GPP TS 25.331 clause 8.3.3 , 8.6.3.4 and 8.6.3.5

8.3.3.3.3 Test purpose

1. To confirm that the UE sends calculated START values for each CN domain to SS after a successful SRNS relocation.

2. In the case that ciphering is applied by the network, to confirm that the UE ~~applies the new~~ restarts ciphering ~~algorithm~~ following a successful SRNS relocation.

3. To confirm that the UE correctly applies integrity protection after the SRNS relocation.

8.3.3.3.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) or PS+CS-DCCH+DTCH_DCH (state 6-14) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in the CELL_DCH state. SS then transmits a UTRAN MOBILITY INFORMATION message, which includes a valid “New U-RNTI”, IE “Downlink counter synchronisation info” and IE “Integrity protection mode info”, to the UE on the downlink DCCH using UM RLC. SS verifies that the UE sends UTRAN MOBILITY INFORMATION CONFIRM message. This message also includes a calculated new START value according to the formula “$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2”, calculated IE ”Integrity Check Info” using a new FRESH value as included in IE “Integrity protection initialisation number” in IE “Integrity protection mode info” in UTRAN MOBILITY INFORMATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

SS transmits UE CAPABILITY ENQUIRY message on the downlink DCCH using RLC-AM. The UE shall respond to downlink message with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM. SS responds with UE CAPABILITY INFORMATION CONFIRM message. SS then send IDENTITY REQUEST message on the DCCH using RLC-AM (SRB3) in order to confirm that the UE can communicate on SRB3 by using new integrity configuration. The UE shall respond IDENTITY RESPONSE message on the uplink DCCH using RLC-AM (SRB3).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		UTRAN MOBILITY INFORMATION	If IE “Ciphering mode info” is present in the SECURITY MODE COMMAND during initial condition set-up, this message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. New U-RNTI identities are assigned to the UE. IE “Downlink counter synchronisation info” is included. New integrity protection configuration is applied on DL SRB1.
2	→		UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. New integrity protection configuration is applied on UL SRB2. If IE “Ciphering mode info” is present in step 1, new ciphering configuration is applied on UL SRB2 with the downlink and uplink values of the HFN component of COUNT-C for SRB2 incremented by one.
3	←		UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. If IE “Ciphering mode info” is present in step 1, new ciphering configuration is applied on DL SRB2 with the same START value as used in step 2.
4	→		UE CAPABILITY INFORMATION	
5	←		UE CAPABILITY INFORMATION CONFIRM	
6	←		DOWNLINK DIRECT TRANSFER	NAS message embedded in this this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3. If IE “Ciphering mode info” is present in step 1, new ciphering configuration is applied on DL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 2.
7	→		UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB3 by UE. If IE “Ciphering mode info” is present in step 1, new ciphering configuration is applied on UL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 2.

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 1) – for PS domain testing only

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	If network does not apply ciphering, set this IE to "Not present". If network applies ciphering, this IE present with the values of the sub IEs as stated below.
- Ciphering mode command	Start/restart
- Ciphering algorithm	Set to an algorithm that is different from the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	Not present
~~- Radio bearer activation time~~	
~~- RB identity~~	~~1~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~2~~
~~- RLC sequence number~~	~~Current RLC SN+2~~
~~- RB identity~~	~~3~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~4~~
~~- RLC sequence number~~	~~Current RLC SN~~
~~- RB identity~~	~~20~~
~~- RLC sequence number~~	~~Current RLC SN~~
Integrity protection mode info - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number	 Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI CN Information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient Downlink counter synchronisation info - RB with PDCP information list	 An arbitrary 12-bits string which is different from original SRNC An arbitrary 20-bits string which is different from original S-RNTI Not Present Not present 00 01H PS 05 00H 7 CS 1E 01H 7 Not Present

UTRAN MOBILITY INFORMATION (Step 1) – for CS domain testing only

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	If network does not apply ciphering, set this IE to "Not present". If network applies ciphering, this IE present with the values of the sub IEs as stated below.
- Ciphering mode command	Start/restart
- Ciphering algorithm	Set to an algorithm that is different from the one indicated in the SECURITY MODE COMMAND during the initial condition set-up.
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN
- RB identity	4
- RLC sequence number	Current RLC SN
Integrity protection mode info - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number	 Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI CN Information info - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information - CN domain specific DRX cycle length coefficient Downlink counter synchronisation info - RB with PDCP information list	 An arbitrary 12-bits string which is different from original SRNC An arbitrary 20-bits string which is different from original S-RNTI Not Present Not present 00 01H PS 05 00H 7 CS 1E 01H 7 Not Present

UTRAN MOBILITY INFORMATION CONFIRM (Step 2) – for PS domain testing only

The same message sub-type found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink DCCH with the following exceptions:

Information Element	Value/remark
Uplink counter synchronisation info - RB with PDCP information list - START list	 Check that this IE is not present. Check that this IE is correct value.

UTRAN MOBILITY INFORMATION CONFIRM (Step 2) – for CS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
COUNT-C activation time	Check that this IE is present.
Uplink counter synchronisation info - RB with PDCP information list - START list	 Not present Check that this IE has the correct value.

UE CAPABILITY ENQUIRY (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 4)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

8.3.3.3.5 Test requirement

After step 1, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC which includes ~~which includes~~ a calculated new START value according to the formula "$START_X'$ = MSB_{20} (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2", calculated IE "Integrity Check Info" using the new FRESH value as included in IE "Integrity protection initialisation number" in IE "Integrity protection mode info" in UTRAN MOBILITY INFORMATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. The UE, further more, shall apply the new ingerity protection configuration for the first received/sent RRC message on SRB0, SRB3, and SRB4 after receiving the UTRAN MOBILITY INFORMATION message (i.e. immediately). For SRB2 the new integrity protection configuration shall be applied from and including the received UTRAN MOBILITY INFORMATION message (DL) and the sent UTRAN MOBILITY INFORMATION CONFIRM message (UL).

After step 3, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 6, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL SRB3.

3GPP TSG-T WG1 Meeting #26
Bangalore, India, Jan 31st- Feb 4th, 2005

Tdoc ⌘T1-050413

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1107** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1 Rel-5; New RRC test case on seamless SRNS relocation using Radio Bearer Reconfiguration (revision of T1-050085)
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	01/02/2005
Category:	⌘	**B**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘

There is no test case on seamless SRNS relocation using the Radio Bearer Reconfiguration procedure.

However, this procedure will be used in live networks for SRNS relocation. A typical scenario for using the Radio Bearer Reconfiguration procedure at SRNS relocation is where the target RNC and source RNC are from different vendors. Especially in those cases, the target RNC typically needs to reconfigure the radio bearers due to different RAB implementations than those in the source RNC.

Also, the triggering of SRNS relocation specific UE actions with the RADIO BEARER RECONFIGURATION message is different than for other reconfiguration messages, since the IE “New U-RNTI” is used instead of the IE “Downlink counter synchronisation info”.

Typically the source RNC reserves some downlink RRC message sequence numbers for integrity protection to be used for downlink NAS messages sent during signalling between source and target RNC. Therefore, from the UE point of view, the SRB3 message received after the relocation typically has a gap in the RRC sequence numbering. This real network scenario should be reflected in T1 specifications.

Summary of change: ⌘

A new test case is created:

8.2.2.43 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Seamless SRNS relocation, without pending of ciphering, frequency band modification).

		In this test case, a RADIO BEARER RECONFIGURATION message is sent to perform a timing re-initialised hard handover to another frequency combined with seamless SRNS relocation. The default RAB configuration is re-applied by the message. Verification of using a gap in the downlink RRC message sequence numbering for integrity protection on SRB3 is covered by the test case.
Consequences if not approved:	⌘	Insufficient test coverage.

Clauses affected:	⌘	8.2.2.43 (new)			
Other specs affected:	⌘	**Y** / **N** **N**	Other core specifications	⌘	
		Y	Test specifications		34.123-2
		N	O&M Specifications		
Other comments:	⌘	Affects R99, Rel-4 and Rel-5 UEs.			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2.40.5 Test requirements

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 6.

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 1.

8.2.2.43 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Seamless SRNS relocation, without pending of ciphering, frequency band modification)

8.2.2.43.1 Definition

8.2.2.43.2 Conformance requirement

1> if the reconfiguration procedure is simultaneous with SRNS relocation procedure:

2> if the transmitted message is a RADIO BEARER RECONFIGURATION:

3> include the IE "New U-RNTI".

The UE shall:

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> re-establish the RLC entity for RB2;

2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);

2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;

2> calculate the START value according to subclause 8.5.9 in TS 25.331;

2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".

1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

If the new state is CELL_DCH or CELL_FACH, the response message shall be transmitted using the new configuration after the state transition, and the UE shall:

1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:

2> when RLC has confirmed the successful transmission of the response message:

3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;

3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;

3> set the remaining bits of the HFN component of COUNT-C values of all UM RLC entities to zero;

3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS as specified in TS 25.323.

…

The UE shall:

1> if IE "Integrity protection mode command" has the value "start" and the IE "Status" in the variable INTEGRITY_PROTECTION_INFO has the value "Started" and this IE was not included SECURITY MODE COMMAND:

NOTE: This case is used in SRNS relocation and in handover from GERAN *Iu mode*.

2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1 in TS 25.331 by:

3> using the algorithm (UIA [TS 33.102]) indicated by the IE "Integrity protection algorithm" contained in the IE "Integrity protection mode info";

3> using the IE "Integrity protection initialisation number", contained in the IE "Integrity protection mode info" as the value of FRESH [TS 33.102].

2> let RBm be the signalling radio bearer where the reconfiguration message was received and let RBn be the signalling radio bearer where the response message is transmitted;

2> for the downlink, for each signalling radio bearer, if for the signalling radio bearer, a security configuration triggered by a previous SECURITY MODE COMMAND has not yet been applied, due to the activation time for the signalling radio bearer not having been reached:

3> set "Down link RRC Message sequence number" for this signalling radio bearer in the variable INTEGRITY_PROTECTION_INFO to (activation time -1), where the activation time is the corresponding activation time for this signalling radio bearer;

3> if the previous SECURITY MODE COMMAND was received due to new keys being received:

4> consider the new integrity protection configuration to include the received new keys.

3> else if the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:

4> consider the new Integrity Protection configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN associated with the previously received SECURITY MODE COMMAND.

2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer in the IE "ESTABLISHED_RABS" except RBm at the next received RRC message for the corresponding signalling radio bearer;

2> start applying the new integrity protection configuration in the downlink for signalling radio bearer RBm from and including the received configuration message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RBn from and including the transmitted response message;

2> start applying the new integrity protection configuration in the uplink for signalling radio bearers other than RBn from the first message onwards.

Reference

3GPP TS 25.331 clause 8.2.2, .8.6.3.5.2.

8.2.2.43.3 Test purpose

1. To confirm that the UE performs a combined inter-frequency hard handover and SRNS relocation and then transmit a RADIO BEARER RECONFIGURATION COMPLETE message in the new cell.

2. To confirm that the UE correctly applies integrity protection after the SRNS relocation.

3. To confirm that the UE accepts a gap in the downlink RRC message sequence numbering for integrity protection on signalling radio bearer 3 after SRNS relocation.

4. In the case that ciphering is applied by the network, to confirm that the UE restarts ciphering following a successful SRNS relocation.

8.2.2.43.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 6

UE: PS-DCCH+DTCH_DCH (state 6-10) or CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.2.43

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-75	-75	-60

Table 8.2.2.43 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in the CELL_DCH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.2.2.43. The SS sends a RADIO BEARER RECONFIGURATION message requesting the UE to do a timing re-initialised inter-frequency hard handover combined with SRNS relocation. This message includes the IE "RRC State Indicator" set to "CELL_DCH", IE “New U-RNTI”, the IE “Integrity protection mode info” and the IE “Timing Indication” set to “initialise”.

UE shall reselect to cell 6 and SS verifies that the UE sends RADIO BEARER RECONFIGURATION COMPLETE message. This message also includes a calculated new START value according to the formula “$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2”, a calculated IE ”Integrity Check Info” using a new FRESH value as included in IE “Integrity protection initialisation number” in the IE “Integrity protection mode info” in the RADIO BEARER RECONFIGURATION message and a COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

SS then send IDENTITY REQUEST message on the DCCH using RLC-AM (SRB3) in order to confirm that the UE can communicate on SRB3 by using new integrity protection configuration, including using a gap in the downlink RRC message sequence number. The UE shall respond with an IDENTITY RESPONSE message on the uplink DCCH using RLC-AM (SRB3).

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.2.43.
2	←		RADIO BEARER RECONFIGURATION	If IE “Ciphering mode info” is present in the SECURITY MODE COMMAND during initial condition set-up, this message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. New integrity protection configuration is applied on DL SRB2. LAI and RAI of cell 6 are given to the UE, and are the same as cell 1.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 6. New calculated START value is included. New integrity protection configuration is applied on UL SRB2.
4	←		DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
5	→		UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB3 by UE. SS uses a gap in the downlink RRC message sequence numbering.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2) – for PS domain testing only

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled “Packet to CELL_DCH from CELL_DCH in PS”, with the following exception:

Information Element	Value/remark
Integrity protection mode info	
- Integrity protection mode command	Start
- Downlink integrity protection activation info	Not Present
- Integrity protection algorithm	UIA1
- Integrity protection initialisation number	SS selects an arbitrary 32 bits number for FRESH
Activation time	Not present
New U-RNTI	
- SRNC identity	0000 0000 0010B
- S-RNTI	0000 0000 0000 0000 0001B
CN Information info	
- PLMN identity	Not present
- CN common GSM-MAP NAS system information	
- GSM-MAP NAS system information	00 01H
- CN domain related information	
- CN domain identity	PS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	05 00H
- CN domain identity	CS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	1E 01H
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DTCH)
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “RB information to setup” for the corresponding radio bearer for the case "Packet to CELL_DCH from CELL_DCH in PS" in the default RADIO BEARER SETUP message in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present

Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialise
- MAC-d HFN initial value	Not present
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset $P_{Pilot-DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
Downlink counter synchronisation info	
- RB with PDCP information list	Not Present.
Frequency info	
CHOICE mode	FDD
- UARFCN uplink (Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink (Nd)	Same downlink UARFCN as used for cell 6
Downlink information per radio link list	
-Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 6
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	0
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

RADIO BEARER RECONFIGURATION (Step 2) – for CS domain testing only

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled “Non speech in CS” or “Speech in CS”, with the following exception:

Information Element	Value/remark
Integrity protection mode info	
- Integrity protection mode command	Start
- Downlink integrity protection activation info	Not Present
- Integrity protection algorithm	UIA1
- Integrity protection initialisation number	SS selects an arbitrary 32 bits number for FRESH
Activation time	Not present
New U-RNTI	
- SRNC identity	0000 0000 0010B
- S-RNTI	0000 0000 0000 0000 0001B
CN Information info	
- PLMN identity	Not present
- CN common GSM-MAP NAS system information	
- GSM-MAP NAS system information	00 01H
- CN domain related information	
- CN domain identity	PS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	05 00H
- CN domain identity	CS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	1E 01H
RB information to reconfigure list	
- RB information to reconfigure	(UM DCCH for RRC)
- RB identity	1
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “Signalling RB information to setup” for the corresponding radio bearer in the default RRC CONNECTION SETUP message (Transition to CELL_DCH) in TS 34.108.
- RB mapping info	
- RB stop/continue	Not Present
- RB information to reconfigure	
- RB identity	10
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Values as specified for the IE “RB information to setup” for the corresponding radio bearer for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
- RB mapping info	
- RB information to reconfigure	

- RB identity - PDCP info - PDCP SN info - RLC info - RB mapping info - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - RB mapping info	11 Not Present Not Present Values as specified for the IE “RB information to setup” for the corresponding radio bearer for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108. 12 Not Present Not Present Values as specified for the IE “RB information to setup” for the corresponding radio bearer for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
UL Transport channel information for all transport channels	Values as specified for the corresponding IE for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
Added or Reconfigured UL TrCH information	Values as specified for the corresponding IE for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
DL Transport channel information common for all transport channel	Values as specified for the corresponding IE for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
Added or Reconfigured DL TrCH information	Values as specified for the corresponding IE for the case "Speech to CELL_DCH from CELL_DCH in CS" in the default RADIO BEARER SETUP message in TS 34.108.
Frequency info CHOICE mode - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 FDD Same uplink UARFCN as used for cell 6 Same downlink UARFCN as used for cell 6
Downlink information common for all radio links - Downlink DPCH info common for all RL - Timing indicator - MAC-d HFN initial value - CFN-targetSFN frame offset - Downlink DPCH power control information - DPC mode - CHOICE mode - Power offset $P_{Pilot-DPDCH}$ - DL rate matching restriction information - Spreading factor - Fixed or Flexible Position - TFCI existence - CHOICE SF - DPCH compressed mode info - TX Diversity mode - SSDT information - Default DPCH Offset Value	 Initialise Not present Not Present 0 (single) FDD 0 Not Present Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Not Present None Not Present Arbitrary set to value 0..306688 by step of 512
Downlink counter synchronisation info - RB with PDCP information list	 Not Present.
Downlink information per radio link list -Downlink information for each radio link - Choice mode - Primary CPICH info - Primary scrambling code - PDSCH with SHO DCH info - PDSCH code mapping - Downlink DPCH info for each RL - Primary CPICH usage for channel estimation - DPCH frame offset	 FDD Set to same code as used for cell 6 Not Present Not Present Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400

- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	0
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

RADIO BEARER RECONFIGURATION COMPLETE (Step 3) – for PS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
Uplink counter synchronisation info	
- RB with PDCP information list	Not present
- START list	Check that this IE is present.

RADIO BEARER RECONFIGURATION COMPLETE (Step 3) – for CS domain testing only

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
COUNT-C activation time	Check that this IE is present.
Uplink counter synchronisation info	
- RB with PDCP information list	Not present
- START list	Check that this IE is present.

DOWNLINK DIRECT TRANSFER (Step 4)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Integrity check info	
Message authentication code	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
RRC Message sequence number	Current RRC SN + 3
CN domain identity	CS domain or PS domain (whichever applicable)
NAS message	IDENTITY REQUEST

NOTE: "Current RRC SN" is defined as the RRC message sequence number of the next transmitted RRC message on the particular radio bearer.

8.2.2.43.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC which includes a calculated new START value according to the formula "$START_X' = MSB_{20}$ (MAX {COUNT-C, COUNT-I | radio bearers and signalling radio bearers using the most recently configured CK_X and IK_X}) + 2", calculated IE "Integrity Check Info" using the new FRESH value as included in IE "Integrity protection initialisation number" in IE "Integrity protection mode info" in RADIO BEARER RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. The UE, further more, shall apply the new ingerity protection configuration for the first received/sent RRC message on SRB0, SRB3, and SRB4 after receiving the RADIO BEARER RECONFIGURATION message (i.e. immediately). For SRB2 the new integrity protection configuration shall be applied from and including the received RADIO BEARER RECONFIGURATION message (DL) and the sent RADIO BEARER RECONFIGURATION COMPLETE message (UL).

After step 3, the UE shall respond with an IDENTITY RESPONSE message to SS and apply the new integrity protection configuration on this message.

8.2.3 Radio Bearer Release

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050425

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1113 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to HSDPA generic radio bearer test procedure
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	2/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Due to incorrect numbering in a MAC-hs CR to test case 7.1.5.6 in T1-041962 at T1#25 the test procedure for MAC-hs test case 7.1.5.6 has been located in the section for the HSDPA generic radio bearer test method.
Summary of change:	⌘	1. Removed autonumbering to section 14.1.3.2 heading. 2. Removed section 14.1.3.2.2
Consequences if not approved:	⌘	Incorrect specification

Clauses affected:	⌘	14.1.3.2

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	An associated CR is provided in T1-050426 to add the test procedure to MAC-hs test case 7.1.5.6.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

~~14.1.3.2~~14.1.3.2 Selecting TFRC test points

14.1.3.2.1 Principle

The transport format and resource combination (TFRC) is identified by the UE by the type of modulation, number of channalisation codes and the transport format and resource identifier (TFRI) signalled on the HS-SCCH.

For the HSDPA radio bearer test cases the principle for selecting typical test points for TFRC is:

1. Select one TFRC per modulation scheme and number of MAC-d PDUs.
2. For each number of MAC-d PDUs select the TFRC minimizing padding.
3. Any TFRC that would cause turbo coder irregularities should be avoided.

The problem with turbo coder regularities appears at certain coding rates. The coding rate for a certain TFCR is:

$Coding\_rate = (TB_{size} + N_{CRC})/(N_{codes} \cdot N_{phy\_bits})$, where

TB_{size} is the selected transport block,

N_{CRC} is the number of CRC bits,

N_{codes} is the number of channelistion codes, and

N_{phy_bits} is the number physical bits per code (960 for QPSK and 1920 for 16QAM).

Table 14.1.3.2.1 lists the coding rates that cause turbo coder irregularities. In case a candidate TFRC value is causing turbo coder irregularities then the closest higher TFRI value, which do not cause any turbo coder irregularities, is selected.

Table 14.1.3.2.1: Coding rates causing degradation due to turbo coder irregularities

Coding rate	Comment
0.77-0.79	Cause loss up to 3.5 dB
0.835-0.84	Cause loss up to 1.5 dB
0.871-0.878	Cause loss up to 2 dB
0.91-0.914	Cause loss up to 2 dB

NOTE The coding rates in Table 14.2.3.2.1 is based on the simulations as described in RAN WG1 document R1-030444 (Turbo-coding and puncturing interactions on HS-DSCH in R5 HSDPA)

The selection algorithm for the TFRC test points for a certain UE category and MAC-d PDU size is:

1. Set the number of MAC-d PDUs, N_PDU, to 1
2. Calculate the minimum transport block size to fit the number of MAC-d PDUs.
3. If the transport block size is less or equal to the UE capability for “Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI” in Table 14.1.3.1.1 then continue with step 4 else there is no more testing points.
4. Select the QPSK test point:
   If it, for the actual UE category and for the selected transport block size, exists a TFRI for QPSK then select the TFRI that maximises the number of codes.
5. Select the 16QAM test point:
   If it, for the actual UE category and for the selected transport block size, exists a TFRI for 16QAM then select the TFRI that maximises the number of codes.
6. Check that the coding rate for the selected TFRC does not cause turbo coder irregularities, see Table 14.1.3.2.1. If the coding rate is ok then accept the testing point and continue with step 8 else continue with step 7.

7. If the coding rate is not ok then select the next higher TFRI value that corresponds to an acceptable coding rate. Calculate the transport block size correspondent to the modified TFRI values and if it is less or equal to the UE capability for "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI" in Table 14.1.3.1.1 then accept the testing point else skip it.

8. Increment N_PDUs. If N_PDU is less or equal to 70 then repeat from step 2 else there is no more testing points.

14.1.3.2.2 Test procedure

a) The SS establishes the reference radio bearer configuration "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" as specified in TS 34.108, clause 6.10.2.4.5.1. See note 1.

b) The SS closes the test loop using UE test loop mode 1 setting the UL RLC SDU size parameter to 39 octets (312 bits).

c) The SS sets *M*= QPSK.

d) The SS sets N_{codes} = 1.

e) The SS sets $k_{0,1}$ to the value according to table 14.1.3.2.1 based on the actual value of *M* and N_{codes}.

f) The SS sets the test parameter k_i to 0.

g) The SS calculates the index value k_t (=k_i + $k_{0,1}$) and lockup the transport block size, TB_{size}, for the actual k_t in table 7.1.5.6.3

If TB_{size} is bigger than the UE capability for "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI" then SS continues with step d) else step h). See note 2.

h) The SS calculates the maximum number of MAC-d PDUs that fits into the MAC-hs transport block:

N_{PDUs} = floor((TB_{size} – *MAC-hs_header_size*) / *MAC-d_PDU_size*)

If N_{PDUs} is bigger than 70 then SS continues with step d) else i).

i) The SS creates a MAC-hs PDU of size TB_{size} containing N_{PDUs} MAC-d PDUs + padding. The payload data of the MAC-d PDUs contains a RLC SDU of size N_{PDUs} * MAC-d PDU payload size minus 8 bits (size of 7-bit length indicator and expansion bit).

j) The SS transmits the MAC-hs PDU.

k) The SS checks that the UE returned RLC SDU has the same content as the first 312 bits of the test data sent by the SS in downlink.

l) The SS increments the test parameter k_i by 1. If k_i is less than 63 then SS repeats steps g) to l).

m) The SS increments the test parameter *N_Code by 1*. If *N_code* is less or equal to the UE capability for *"Maximum number of HS-DSCH codes received"* then the SS repeats test steps e) to m) else continue with step n). See note 2.

n) If *Modulation* = QPSK and UE capability for *"Supported modulation"* is 16QAM then the SS sets the test parameter *Modulation* to 16QAM and repeats steps d) to n) else continue with step o). See note 2.

o) The SS opens the UE test loop.

p) The SS release the radio bearer.

q) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The SS configures the physical channel parameters according to the actual UE category under test.

NOTE 2: See table Table 14.1.3.1.1 in section 14.1.3.1 for FDD HS-DSCH physical layer and RLC and MAC-hs capability parameters and there values for different UE FDD HS-DSCH physical layer categories (UE categories). The capability parameters having impact on the test procedure are: "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI", *"Maximum number of HS-DSCH codes received" and "Supported modulation"*

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		SERVICE REQUEST (DCCH)	GMM
7	<--		SECURITY MODE COMMAND	RRC see note 1
8	-->		SECURITY MODE COMPLETE	RRC see note 1
9	<--		ACTIVATE RB TEST MODE (DCCH)	TC
10	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
11	<--		RADIO BEARER SETUP (DCCH)	RRC. For the PS radio bearer the 'pdcp info' IE shall be omitted.
12	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
13	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is set to 39 octets
14	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
15	SS			The SS calculates test data for the first TFRC (TFRI,N_{codes} and *M*).
16	<--		DOWNLINK MAC-hs PDU	Send test data
17	-->		UPLINK RLC SDU	The SS checks that the content of the received UL RLC SDU is correct
18	SS			The SS calculates test data for next TFRC and repeat steps 16 to 18 until all TFRCs have been tested.
19	<--		OPEN UE TEST LOOP (DCCH)	TC
20	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
21			RB RELEASE	RRC
22	<--		DEACTIVATE RB TEST MODE	TC Optional step
23	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step
Note 1 In addition to activate integrity protection Step 6 and Step 7 are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.				

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050427

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1041** ⌘ **rev** **-** ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 2 RRC test case 8.4.1.19 (Revison of T1-050046, T1-050291)
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	31/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The specific message content System Information Block type 12 (Step 33) (FDD & TDD) is inconsistent with 8.4.1.18 which is of similar nature. It is also mis-aligned with the current TTCN implementation.
Summary of change:	⌘	The specific message content System Information Block type 12 (Step 33) (FDD & TDD) has been corrected to be consistent with 8.4.1.18 and the currentl TTCN implementation.
Consequences if not approved:	⌘	The prose will be inconsistent with the TTCN and may fail validation.

Clauses affected:	⌘	8.4.1.19.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.19 Measurement Control and Report: Traffic volume measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.19.1 Definition

8.4.1.19.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH or CELL_PCH or URA_PCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "traffic volume" stored in the variable MEASUREMENT_IDENTITY; and

2> if the optional IE "measurement validity" for this measurement has not been included:

3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.

2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":

3> stop measurement reporting;

3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.

2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":

3> continue measurement reporting.

2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":

3> resume this measurement and associated reporting.

1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL_FACH or CELL_PCH or URA_PCH states (stored in the variable MEASUREMENT_IDENTITY), which has the same identity as the one indicated in the IE "Traffic volume measurement system information":

2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT_IDENTITY;

2> begin traffic volume measurement reporting according to the assigned information.

Reference

3GPP TS 25.331 clauses 8.4.1.6.6.

8.4.1.19.3 Test Purpose

1. The UE shall performs traffic volume measurements and the associated reporting when it enters CELL_FACH state from CELL_DCH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL_FACH state have been previously stored.

2. The UE shall perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions has been satisfied.

Reference

3GPP TS 25.331 clause 8.4.1.6.6

8.4.1.19.4 Method of test

Initial Condition

System Simulator: 1 cell
SYSTEM INFORMATION BLOCK TYPE 1 (see specific message contents).

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

Initially the UE is in CELL_DCH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL_DCH state to CELL_FACH state. While entering CELL_FACH state from CELL_DCH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL_FACH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL_DCH state from CELL_FACH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.
The behavior of the UE when moved from CELL_DCH state to CELL_FACH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL_DCH state" or "CELL_DCH state" or "All states" is tested in a similar way.
When the UE is in CELL_DCH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. The UE is taken to CELL_FACH state from CELL_DCH state using RADIO BEARER RECONFIGURATION procedure. In CELL_FACH state the UE shall perform traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2		→	MEASUREMENT REPORT	
3		←	RADIO BEARER RECONFIGURATION	
4		→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6		←	RADIO BEARER RECONFIGURATION	
7		→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
8				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.

9	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
11	←	RADIO BEARER RECONFIGURATION	
12	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13	→	MEASUREMENT REPORT	
14	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18	→	MEASUREMENT REPORT	
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21			SS waits for 8 seconds to confirm that there is no
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.

25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
33	←	SIB12 modified	Traffic volume measurements and reporting is assigned to UEs
34	←	RADIO BEARER RECONFIGURATION	
35	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 33).
36	→	MEASUREMENT REPORT	
37	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

System Information Block type 1 (FDD)

Use the default system information block with the same type specified in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
- UE Timers and constants in connected mode	
- T312	2

MEASUREMENT CONTROL (Step 1)

Information Element	Value/remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

The order in which the RBs are reported is not checked.

Information Element	Value/remark
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 34)

Use the same message type found in TS 34.108 clause 9 with condition set to A5.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in TS 34.108 clause 9 with condition set to A4.

MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

MEASUREMENT REPORT (Step 13)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

MEASUREMENT CONTROL (Step 14)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

MEASUREMENT REPORT (Step 18)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

System Information Block type 12 (Step 33) (FDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	~~Not Present~~
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 1
- Primary CPICH Tx power	Not Present
- TX Diversity indicator	FALSE
- Cell selection and re-selection info for SIB11/12	
- $Qoffset1_{s,n}$	0dB
- $Qoffset1_{s,n}$	Not present
- Maximum allowed UL Tx Power	Reference to table 6.1.1
- HCS neighbouring cell information	Not Present
- CHOICE mode	FDD
- Qqualmin	Reference to table 6.1.1
- Qrxlevmin	Reference to table 6.1.1
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present

- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

System Information Block type 12 (Step 33) (TDD)

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Intra-frequency measurement system information	~~Not Present~~
- Intra-frequency measurement identity	Not Present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	TDD
- Primary CCPCH info	Set to same as used for cell 1
- TX Diversity indicator	FALSE
- Cell selection and re-selection info for SIB11/12	
- $Qoffset1_{s,n}$	0dB
- $Qoffset1_{s,n}$	Not present
- Maximum allowed UL Tx Power	Reference to table 6.1.1
- HCS neighbouring cell information	Not Present
- CHOICE mode	TDD
- Qrxlevmin	Reference to table 6.1.1
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH reporting	Not Present
- Maximum number of reported cells on RACH	Not Present
- Reporting information for state CELL_DCH	Not Present

- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	TRUE
- RB buffer payload average	FALSE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds

MEASUREMENT REPORT (Step 36)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 37)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.19.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 13, 29 and 36. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 21.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050432

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1118 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to GCF P4 IR_U 8.3.7.9 and 8.3.7.13 (Revision of T1-050031 & T1-050408)
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	02/01/05
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	To align the prose with the TTCN implementation.
Summary of change:	⌘	In clause 8.3.7.9.4, Specific message contents of HANDOVER FROM UTRAN COMMAND-GSM, the RAB_Info IE has been omitted. In clause 8.3.7.13.4, Specific message contents of HANDOVER FROM UTRAN COMMAND-GSM, the RAB_Info IE has been omitted.
Consequences if not approved:	⌘	The prose and TTCN will be inconsistent

Clauses affected:	⌘	8.3.7.9.4 and 8.3.7.13.4

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.7.9 Inter system handover from UTRAN/To GSM/Speech/Failure (Unsupported configuration)

8.3.7.9.1 Definition

8.3.7.9.2 Conformance requirement:

If:

…

- the UTRAN instructs the UE to use a non-supported configuration; or

…

the UE shall:

1> transmit a HANDOVER FROM UTRAN FAILURE message, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "Inter-RAT handover failure" to "configuration unacceptable";

2> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:

3> resume normal operation as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;

3> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.8

8.3.7.9.3 Test purpose

To test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "configuration unacceptable" in IE "Inter-RAT Handover failure cause", when it receives a HANDOVER FROM UTRAN COMMAND message, with the IE "GSM message" containing a HANDOVER COMMAND message including a configuration not supported by the UE.

8.3.7.9.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE: Idle state (state 2 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480 GSM-PCS.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS brings the UE into call active state (CC state U10) with AMR on the UTRAN cell. The SS then sends an HANDOVER FROM UTRAN COMMAND message including a configuration not supported by the UE in the HANDOVER COMMAND that is contained in the IE "GSM message", to the UE through DCCH using the UTRAN configuration. The UE receives the command and finds that the configuration given in Inter Rat message is not supported. The SS checks that the UE reverts to the old UTRA configuration by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS using the old UTRA configuration.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HANDOVER FROM UTRAN COMMAND -GSM	Send using the UTRAN configuration and the message carries an unsupported configuration.
3	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message via the old UTRAN configuration.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RAB_Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the frequency band is set to a value not supported by the UE.

HANDOVER FROM UTRAN FAILURE

The contents of this message is identical to the HANDOVER FROM UTRAN FAILURE message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
Inter-RAT handover failure -Inter-RAT handover failure cause	 configuration unacceptable

8.3.7.9.5 Test requirement

After step 2 the SS shall receive a HANDOVER FROM UTRAN FAILURE message via the old UTRA configuration.

8.3.7.13 Inter system handover from UTRAN/To GSM/ success / call under establishment

8.3.7.13.1 Definition

8.3.7.13.2 Conformance requirement:

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

Value of the IE "System type"	Standard to apply	Inter RAT Message
GSM	GSM TS 04.18, version 8.5.0 or later	HANDOVER COMMAND
cdma2000	TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later	

1> if the IE "System type" has the value "GSM":

2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1800 band".

2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":

3> set the BAND_INDICATOR [45] to "ARFCN indicates 1900 band".

1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.

1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:

2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":

3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.

NOTE: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.

NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.

….

Upon successfully completing the handover, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

Upon successfully completing the handover, the UE shall:

1> if the USIM is present:

2> store the current START value for every CN domain in the USIM [50];

2> if the "START" stored in the USIM [50] for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START_THRESHOLD:

3> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;

3> inform the deletion of these keys to upper layers.

1> if the SIM is present:

2> store the current START value for every CN domain in the UE;

2> if the "START" stored in the UE for a CN domain is greater than or equal to the value "THRESHOLD" of the variable START_THRESHOLD:

3> delete the ciphering and integrity keys that are stored in the SIM for that CN domain;

3> inform the deletion of these keys to upper layers.

1> if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:

2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

Reference

3GPP TS 25.331 clause 8.3.7.3, 8.3.7.4

8.3.7.13.3 Test purpose

To test that the UE supporting both GSM and UTRAN performs handover from UTRAN to the indicated channel of GSM target cell when the UE receives a HANDOVER FROM UTRAN COMMAND in call establishment phase.

To test that the UE continues the call in the GSM cell, after succesful completion of the Handover.

8.3.7.13.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U0 (NULL state) in cell 1.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U0 (NULL) on cell 1.

Test Procedure

The SS activates the UTRAN cell and GSM Cell. The UE is triggered to initialise an MO speech call. During the call establishment phase, the SS is configured to not transmit the RLC Acknowledgment for SETUP message. SS configures a dedicated channel in GSM Cell, then sends the UE an HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The SS checks MS correctly retransmits CC SETUP message, that was not acknowledged by UTRAN RLC Layer before the Handover, following completion of the handover to GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	SS does not Acknowledge it
3	SS			The SS starts the GSM cell and configure a dedicated channel SDCCH.
4	←		HANDOVER FROM UTRAN COMMANDGSM	Send via the UTRA configuration and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 9 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11			Void	
12			Void	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.
14	->		SETUP	The SS receives the message on the dedicated channel of GSM cell.
15	<-		CHANNEL RELEASE	

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

The contents of this message is identical to the HANDOVER FROM UTRAN COMMAND-GSM message specified in [9] TS 34.108 clause 9 with the following exceptions:

Information Element	Value/remark
RAB_info Inter-system message - System type - Frequency Band - CHOICE GSM message - Message	Not present GSM Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" Single GSM message GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 11.10-1 version 8.2.0 Release 1999.

8.3.7.13.5 Test requirement

At step 14 the SS shall receive SETUP message on the dedicated channel of the GSM cell.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050434

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1119 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Alignment of IE Names used in Clause 12 to the core specification (revision of T1-050021)
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**D**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Some of the information element names used in the test specification do not match to the core specification TS 24.008.
Summary of change:	⌘	1. ATTACH REQUEST and ROUTING AREA UPDATE REQUEST:- a. changed from “Routing Area Identity” to “Old Routing Area Identity”. b. Added the “Old P-TMSI signature=” to specify the meaning of the P-TMSI signature value. 2. ATTACH ACCEPT, ROUTING AREA UPDATE ACCEPT and P-TMSI REALLOCATION COMMAND:- a. changed from “Mobile Id” to “Allocated P-TMSI”. b. Added “P-TMSI Signature =” to specify the meaning of the P-TMSI signature value
Consequences if not approved:	⌘	Mismatch between the test specification and the core specification.

Clauses affected:	⌘	12.2.1.10.4, 12.9.4.4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	No impact to TTCN

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.2.1.10 PS attach / abnormal cases / Failure due to non-integrity protection

12.2.1.10.1 Definition

12.2.1.10.2 Conformance requirement

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

- GMM messages:
  - AUTHENTICATION & CIPHERING REQUEST
  - AUTHENTICATION & CIPHERING REJECT
  - IDENTITY REQUEST
  - ATTACH REJECT
  - ROUTING AREA UPDATE ACCEPT (at periodic routing area update with no change of routing area or temporary identity)
  - ROUTING AREA UPDATE REJECT
  - SERVICE REJECT
  - DETACH ACCEPT (for non power-off)

Reference(s):

3GPP TS 24.008 clause 4.1.1.1.1

12.2.1.10.3 Test purpose

To verify that the UE ignores NAS signalling messages when the security mode procedure is not activated.

12.2.1.10.4 Method of test

Initial Conditions

System Simulator:

One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".

User Equipment:

The UE has a valid IMSI.

Related ICS Statements

Support of PS service	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No

Test procedure

The attach procedure is initiated. Upon reception of ATTACH REQUEST message from the UE, the SS responds with an ATTACH ACCEPT message without the integrity protection. The UE shall ignore this message and re-transmit ATTACH REQUEST message at expiry of timer T3310.
This time the SS starts the authentication procedure and initiates the integrity protection. After receiving ATTACH ACCEPT message, the UE shall respond to ATTACH COMPLETE message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach procedure (see ICS).
3	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7	SS			The SS does not initiate the security mode procedure.
8	<-		ATTACH ACCEPT	
9	UE			The UE ignores ATTACH ACCEPT message.
10	SS			The SS waits 15 sec (T3310).
11	->		ATTACH REQUEST	The UE re-transmits the message. The SS verifies that the period of time between the ATTACH REQUEST messages corresponds to the value of T3310. Attach type = 'GPRS attach' Mobile identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN
13	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
14	SS			The SS starts integrity protection.
15	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' ~~Mobile identity = P-TMSI~~Allocated P-TMSI = P-TMSI
16	->		ATTACH COMPLETE	
17	UE			The UE is switched off or power is removed (see ICS).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
19	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.

Specific Message Contents

None.

12.2.1.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall;

- ignore the first ATTACH ACCEPT message.

At step11, UE shall;

- re-transmit ATTACH REQUEST message after expiry of timer T3310.

At step16, UE shall;

- respond to ATTACH COMPLETE message after the UE receives the second ATTACH ACCEPT message.

12.9.4 Service Request / rejected / PS services not allowed

12.9.41 Definition

12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "GPRS services not allowed", the UE shall:

1) set the GPRS update state to GU3 ROAMING NOT ALLOWED.
2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.
3) consider the USIM as invalid for PS service until the UE is switched off or until the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.4.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "GPRS services not allowed in this PLMN".

12.9.4.4 Method of test

Initial condition

System Simulator:
One cell operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00".
User Equipment:
The UE has a valid P-TMSI-1 and RAI-1.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #7(GPRS services not allowed).

c) After the UE receives the SERVICE REJECT message with the cause value #7(GPRS services not allowed), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4	->		ATTACH REQUEST	Attach type = 'GPRS attach' ~~Old P-TMSI signature=~~Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts ciphering and integrity protection.
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'GPRS only attached'
6	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
9a	SS			The SS releases the RRC connection
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
14a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
15	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
15a	<-		AUTHENTICATION AND CIPHERING REQUEST	
15b	->		AUTHENTICATION AND CIPHERING RESPONSE	
15c	SS			The SS starts ciphering and integrity protection.
16	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
17a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"

Step	Direction		Message	Comments
	UE	SS		
20	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
20a	SS			The SS releases the RRC connection
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
23	UE			The UE gets the USIM replaced, is powered up or switched on.
24			Void	
25	UE			The UE initiates a PS attach, by MMI or by AT command.
25a	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			The SS starts ciphering and integrity protection.
27	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	
28a	SS			UE is moved to PMM idle. (The SS releases the RRC connection)
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		SERVICE REJECT	Reject cause = "GPRS services not allowed"
32			VOID	
33			VOID	
34	SS			The SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36			Void	
37			Void	
38	UE			The UE is set to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 37.

Specific message contents

12.9.4.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "GPRS services not allowed" UE shall:

- not attempt to access the network.

At step26, when the UE gets the USIM replaced, is powered up or switched on,UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

Tdoc ⌘T1-050439

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1120 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 NAS test case 12.4.1.4c Proc 2 (revision of T1-050040)
Source:	⌘	Anritsu Ltd
Work item code:	⌘	N/A
Date:	⌘	15/01/05
Category:	⌘	**D**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	At step 4, The prose states that a new T3312 timer value should be allocated to the UE in this test, however the ATTACH ACCEPT message IE is named "Periodic RA Update Timer" in 3GPP TS 24.008 clause 9 and not T3312. To clear up the meaning in the prose, the correct IE name should be given with "T3312" given as additional information. Minor typo corrections for step 12.
Summary of change:	⌘	In step 4, the IE name for T3312 has been corrected to be Periodic RA Update Timer. In step 12, corrected minor typing error.
Consequences if not approved:	⌘	The prose will be inconsistent with the core specification.

Clauses affected:	⌘	12.4.1.4c.4.2

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘ No impact to TTCN as the TTCN is already implemented this way.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

12.4.1.4c.1 Definition

12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.
- shall set the PS update status to GU3 ROAMING NOT ALLOWED.
- store the PLMN identity in the "forbidden PLMNs for PS service" list.
- not delete the equivalent PLMN list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

   UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

   UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

   UE shall be still IMSI attached for CS services in the network.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.4.1.4c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II.
The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to value "00 00" in all cells.

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

The UE is in UE operation mode C.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure 1

The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
4a		<-	AUTHENTICATION AND CIPHERING REQUEST	
4b		->	AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			The SS starts integrity protection.
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'GPRS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
				The following messages are sent and shall be received on cell B.
6	SS			Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Old Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Serving cell". (see note)
13	UE			The UE performs PLMN selection.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	SS			Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
17		->	ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
17a		<-	AUTHENTICATION AND CIPHERING REQUEST	
17b		->	AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS			The SS starts integrity protection.

18	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 P-TMSI Signature = P-TMSI-1 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, GPRS detach'
22	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

Test procedure2

Initial condition

System Simulator:

One cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I.

T3212 is set to 6 minutes.

User Equipment:

The UE has a valid P-TMSI-1 and RAI-1.

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout. The SS rejects a routing area updating with the cause value 'GPRS services not allowed in this PLMN'. The UE sets the timer T3212 to its initial value and restart it, if it is not already running.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined GPRS/IMSI attach' Mobile identity = P-TMSI-1 Old Routing area identity = RAI-1
3a	<-		AUTHENTICATION AND CIPHERING REQUEST	
3b	->		AUTHENTICATION AND CIPHERING RESPONSE	
3c	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined GPRS/IMSI attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-1 Periodic RA Update Timer (T3312) = 6 minutes
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
5b	SS			The SS verifies that the time between the attach and the periodic RA updating is T3312
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' Old P-TMSI signature=P-TMSI-2 signature Old Routing area identity = RAI-1
7	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
8	UE		Registration on CS	See TS 34.108 Location Update Procedure is initiated from the UE when T3212 is expired.
9	->		void	
10	<-		void	
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type – 'power switched off, IMSI detach'ed.
13	SS			The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.4.1.4c.5 Test requirements

Test requirement for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step11, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;

- not respond to the paging message for PS domain.

At step13, UE shall,

- initiate PLMN selection.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:
- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, UE shall;
- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step7, after the routing area updating procedure is rejected with GMM cause = 'GPRS services not allowed in this PLMN', UE shall;
- set the timer T3212 to its initial value and restart it.

At step8, UE shall,

- initiate the periodic location area updating procedure when the timer T3212 is expired.

3GPP TSG-T1#26
31 Jan - 4 Feb Bangalore

T1 ⌘050449

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1126 ⌘ **rev** - ⌘ Current version: 5.10.0 ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to Package 4 test case 12.2.1.5d (Revision of T1-050021)
Source:	⌘	Anritsu and Nokia
Work item code:	⌘	N/A
Date:	⌘	07/12/04
Category:	⌘	**F**
Release:	⌘	REL - 5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘ 1/ According to exsisting 34.123-1 clause 12.2.1.5d.4 expected sequence at Step 12 ,UE should perform "PLMN selection" but UE still stands in CellA even after Rejection Cause #14 at step 11.This is because specification TS24.008 clause 4.7.3.1.4 is quite broadly written at this point and need to be Interpreted as: when UE is in operation mode A, it needs to stay in current cell after this reject cause, in CS service and UE in UE operation mode C makes a PLMN selection.

~~2/ UE will send IMSI_DETACH_IND as it is still Attached for CS Services at step 28~~

3/ In ATTACH ACCEPT at Step 6 ,UE has being assigned with PTMSI-1, hence there should be ATTACH COMPLETE followed by ATTACH ACCEPT.

4/ At Step1,support for UE in UE operation mode C and UE in UE operation mode A should be provided for the following reasons:
4a) As per TS 34.123 clause 12.2.1.5d.4,support for operation mode C and Support for operation Mode A is needed.
4b) Also to cope up with the new change at step12

Summary of change: ⌘ 1/ Step 12 will be split in two sub steps as 12a and 12b.
At Step 12a, UE in UE Operation Mode C, will Perform the PLMN Selection.
At Step12b, UE in UE Operation Mode A,UE will Perform Cell Reselection and SS will Configure the Power such that CellC>CellA=CellB.

~~2/ Step 28 will be split into 28a where UE will send IMSI_DETACH_IND for CS services and Step 28b where UE will send DETACH REQ with Detach Type=PS Detach.~~

3/ Added Step 6a to cope up with ATTACH COMPLETE.

		4/ Added support for UE in UE operation mode A and UE in UE operation mode C at step1
Consequences if not approved:	⌘	Test Case Will Fail with Conformant UE.

Clauses affected:	⌘	12.2.1.5d.4 and 12.2.1.5d.5			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.2.1.5dPS attach / rejected / PS services not allowed in this PLMN

12.2.1.5d.1 Definition

12.2.1.5d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'GPRS services not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

   1.4 perform a PLMN selection instead of a cell selection, if the UE is in UE operation mode C.

2) If the UE is in UE operation mode A or B and the network is in network operation mode II the User Equipment shall:

   2.1 be still IMSI attached for CS services in the network..

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'GPRS services not allowed in this PLMN'.

12.2.1.5d.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

Sintrasearch and Sintersearch values for cells A, B and C are 20 dB.

NB: i) Cell C will be mapped to Cell 4 as found in TS 34.108 clause 6.1.4.1.

User Equipment:

The UE has a valid P-TMSI-1, RAI-1.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No (only if mode C not supported)
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'GPRS services not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = GPRS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A OR The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". Set the cell type of cell C to the " Non-suitable cell " (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1
5	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c	SS			The SS starts integrity protection.
6	<-		ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
6a	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = re-attach required
8	->		DETACH ACCEPT	
9	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note)
10	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'GPRS services not allowed in this PLMN'
~~12~~A12	UE			If the UE is in UE Operation Mode C The UE performs PLMN selection.
B12	UE			If the UE is in Operation Mode A The UE initiates an attach automatically, by MMI or by AT command.
B12a	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
B12b	SS			The SS is set in network operation mode II. Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Serving cell " (see note)
		SS		The following messages are sent and shall be received on cell C.
13	->		ATTACH REQUEST	Attach type = 'GPRS attach' Mobile identity = IMSI
14	<-		AUTHENTICATION AND CIPHERING REQUEST	
15	->		AUTHENTICATION AND CIPHERING RESPONSE	

16	SS		The SS starts integrity protection.
17	<-	ATTACH ACCEPT	Attach result = 'GPRS only attached' Allocated P-TMSI = P-TMSI-2 P-TMSI Signature = P-TMSI-2 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
18	->	ATTACH COMPLETE	
19	<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20		Void	
21	->	RRC CONNECTION REQUEST	
22	<-	RRC CONNECTION SETUP	
23	->	RRC CONNECTION SETUP COMPLETE	
24	->	PAGING RESPONSE	
25	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
26	->	RRC CONNECTION RELEASE COMPLETE	
27	UE		The UE is switched off or power is removed (see ICS).
28	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined GPRS / IMSI detach'
29	SS		The SS releases the RRC connection. If no RRC CONNECTION RELEASE COMPLETE message have been received within 1 second then the SS shall consider the UE as switched off.
NOTE:	The definitions for "Suitable neighbour cell", "Non-suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5d.5 Test requirements

At step5 and 10, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, UE shall:

- perform PLMN selection, only if the UE is in UE Operation Mode C.

At step13, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step21, UE shall:

- respond the Paging for CS domain service.

3GPP TSG-T WG1 Meeting #26
Bangalore, India, Jan 31st- Feb 4th, 2005

Tdoc ⌘T1-050435

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** **1132** ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to 34.123-1 Rel-5; New HSDPA RRC test cases (revision of T1-050267)
Source:	⌘	Ericsson
Work item code:	⌘	HSDPA
Date:	⌘	04/02/2005
Category:	⌘	**B**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Addition of HSDPA RRC signalling test cases according to the workplan for HSDPA testing.
Summary of change:	⌘	The following test cases are added: 8.2.2.41 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (start and stop of HS-DSCH reception, during an active CS bearer) Note: This test cases uses one RB multiplexing option. 8.2.2.42 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, start and stop of HS-DSCH reception, during an active CS bearer) Note: This test cases uses three RB multiplexing options. 8.2.6.49 Physical Channel Reconfiguration for transition from CELL_DCH to URA_PCH: Success (stop of HS-DSCH reception) Note: This test cases uses three RB multiplexing options.
Consequences if not approved:	⌘	Limited test coverage for HSDPA.

Clauses affected:	⌘	8.2.2.41, 8.2.2.42, 8.2.6.49 (all new)

Other specs affected:	⌘	Y	N		⌘	
			X	Other core specifications		
		X		Test specifications		34.123-2

	X	O&M Specifications
Other comments:	⌘	Affects Rel-5 UEs.

How to create CRs using this form:

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2.40.5 Test requirements

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 6.

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 1.

8.2.2.41 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Start and stop of HS-DSCH reception, during an active CS bearer)

8.2.2.41.1 Definition and applicability

All UEs which support FDD, HS-PDSCH and simultaneous CS and PS services.

8.2.2.41.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";
- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25, 8.6.3.1

8.2.2.41.3 Test purpose

To confirm that the UE starts and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message when a circuit-switched radio bearer is established and mapped to DCH.

8.2.2.41.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports CS and PS services

Test Procedure

The UE has only signalling radio bearers established. A PS radio bearer is established mapped to HS-DSCH with HS-DSCH reception activated. Then, a CS radio bearer is established.

The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to stop the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to start the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←→		P25	SS establishes a PS RAB mapped to HS-DSCH. See below for the specific message content used in the RADIO BEARER SETUP message.
2	←→			SS establishes a CS RAB.
3	←		RADIO BEARER RECONFIGURATION	Stop of HS-DSCH reception
4				At the activation time, SS stops HS-DSCH transmission to the UE.
5	→		RADIO BEARER RECONFIGURATION COMPLETE	
6	←		RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception
7				At the activation time, SS resumes HS-DSCH transmission to the UE.
8	→		RADIO BEARER RECONFIGURATION COMPLETE	
	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Use the same message as specified for “Packet to CELL_DCH / HS-DSCH using one multiplexing option" in 34.108.

RADIO BEARER RECONFIGURATION (step 3)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following.

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	6
- Logical channel identity	Not Present
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0

RADIO BEARER RECONFIGURATION (step 6)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	DCH
- Transport channel identity	6
Added or Reconfigured DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	Not Present
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	
- MAC-hs queue Id	0
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not Present
- DCH quality target	Not Present
Downlink information for each radio link	
- Serving HS-DSCH radio link indicator	TRUE

8.2.2.41.5 Test requirements

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 7, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

8.2.2.42 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, start and stop of HS-DSCH reception, during an active CS bearer)

8.2.2.42.1 Definition and applicability

All UEs which support FDD, HS-PDSCH and simultaneous CS and PS services.

8.2.2.42.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if "DPCH frame offset" is included for one or more RLs in the active set:

2> use its value to determine the beginning of the DPCH frame in accordance with the following:

3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).

3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";

- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If IE "Timing indication" has the value "initialise", UE shall:

1> execute the Timing Re-initialised hard handover procedure by following the procedure indicated in the subclause relevant to the procedure chosen by the UTRAN.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.5.25, 8.6.3.1

8.2.2.42.3 Test purpose

To confirm that the UE starts and stops receiving the HS-DSCH in conjunction with a interfrequency hard handover without prior measurement on the target frequency according to the received RADIO BEARER RECONFIGURATION message when a circuit-switched radio bearer is established and mapped to DCH.

8.2.2.42.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH
- UE supports CS and PS services

Test Procedure

Table 8.2.2.42

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/3.84MHz	-55	-55	OFF	-55

Table 8.2.2.42 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execusion.

SS has configured its downlink transmission power setting according to columns “T0” in table 8.2.2.42. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established. Then, a CS radio bearer is established.

SS switches its downlink transmission power setting to columns “T1” in table 8.2.2.42.

The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to perform a timing re-initialised interfrequency hard handover to cell 6 and stop the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC in cell 6.

The SS transmits a RADIO BEARER RECONFIGURATION message instructing the UE to perform an interfrequency hard handover to cell 1 and start the reception of HS-DSCH. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC in cell 1.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←→			SS establishes a CS RAB.
2	SS			SS switches its downlink transmission power setting to columns “T1” in table 8.2.2.42.
3	←		RADIO BEARER RECONFIGURATION	Hard handover, stop of HS-DSCH reception
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is received in cell 6.
5	←		RADIO BEARER RECONFIGURATION	Hard handover, start of HS-DSCH reception
6	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is received in cell 1.
7	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RECONFIGURATION (step 3)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108, except for the following.

Information Element	Value/remark
Activation time	Now
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	200
- Timer_poll	200
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
- CFN-targetSFN frame offset	0
- Downlink DPCH power control information	Not Present
- Downlink rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or flexible position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not present
- TX Diversity mode	Not Present
- SSDT information	Not Present
- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	1 radio link
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to the scrambling code for cell 6
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Serving HS-DSCH radio link indicator	FALSE
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel	Primary CPICH may be used

estimation	
- DPCH frame offset	Set to value of DPCH Frame Offset modulo 38400
- Secondary CPICH info	Not present
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Any value between 0 and Spreading factor-1
- Scrambling code change	Not Present
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

RADIO BEARER RECONFIGURATION (step 5)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RB information to reconfigure list	
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
Added or Reconfigured DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	Not Present
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	
- MAC-hs queue Id	0
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not Present
- DCH quality target	Not Present
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 1
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indication	Initialise
- CFN-targetSFN frame offset	0
- Downlink DPCH power control information	Not Present
- Downlink rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or flexible position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not present
- TX Diversity mode	Not Present
- SSDT information	Not Present

- Default DPCH Offset Value	Arbitrary set to value 0..306688 by step of 512
- MAC-hs reset indicator	TRUE
Downlink information per radio link list	1 radio link
Downlink information for each radio link	
- CHOICE mode	FDD
- Primary CPICH info	Set to the scrambling code for cell 1
- Cell ID	Not present
- PDSCH with SHO DCH info	Not present
- PDSCH code mapping	Not present
- Serving HS-DSCH radio link indicator	TRUE
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value of DPCH Frame Offset modulo 38400
- Secondary CPICH info	Not present
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set
- Secondary scrambling code	Not present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Any value between 0 and Spreading factor-1
- Scrambling code change	Not Present
- TPC combination index	0
- SSDT cell identity	Not present
- Closed loop timing adjustment mode	Not present

8.2.2.42.5 Test requirements

After step 3, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message in cell 6.

After step 5, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message in cell 1.

8.2.3 Radio Bearer Release

8.2.6.48.5 Test requirements

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

After step 4, the UE shall transmit a MEASUREMENT REPORT message with cell 6 as the reported cell.

After step 6, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message in cell 6.

8.2.6.49 Physical Channel Reconfiguration from CELL_DCH to URA_PCH: Success (stop of HS-DSCH reception)

8.2.6.49.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.6.49.2 Conformance requirement

If the UE receives:

- a PHYSICAL CHANNEL RECONFIGURATION message; or

it shall:

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in TS 25.214;

1> act upon all received information elements as specified in TS 25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:

1> enter a state according to TS 25.331 subclause 8.6.3.3.

If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS 25.304 on that frequency.

1> select Secondary CCPCH according to TS 25.331 subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS 25.331 subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

…

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

1> clear that entry;

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the new state is URA_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

1> when RLC has confirmed the successful transmission of the response message:

…

2> enter the new state (URA_PCH);

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";

- IE "Uplink DPCH Power Control Info" including stored Δ_{ACK}, Δ_{NACK} and Ack-NACK Repetition factor;

- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.2.5.25.

8.2.6.49.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and enter URA_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH with active HS-DSCH reception to URA_PCH.

8.2.6.49.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS_DCCH_DTCH_HS_DSCH (state 6-17) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer mapped on HS-DSCH established with active HS-DSCH reception. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE stops HS-DSCH reception, transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state. SS calls for generic procedure C.5 to check that UE is in URA_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before it completes state transition.
3				SS sends the L2 ack on the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then waits 5 seconds to allow the UE to read system information before the next step. Note: The SS should continue to keep the dedicated channel configuration during the time when the L2 ack is sent to the UE.
4	←→		CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in TS 34.108 with following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3

8.2.6.49.5 Test requirement

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.7 Physical Shared Channel Allocation [TDD only]

[Editor's note: This message is not included in Release99 so this is FFS.]

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050467r1

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1136 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME [X] Radio Access Network ☐ Core Network ☐

Title:	⌘	Generic test procedure for HS-DSCH multi-RB combinations
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	4/2/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

1. Editorial mistakes in section 14.
2. The generic HSDPA radio bearer procedure need to be updated to handle testing of HSDPA multi radio bearer combinations.

Summary of change: ⌘

1. 14.1.2 step B7 and 14.1.2a step B7: Editorial correction to message "PAGING TYPE 2 (DCCH)"
2. 14.1.3.5.2:
   a. Step f) separated from step e) (inserted line feed)
   b. Added comment "(repeated for each sub-test)" to heading of expected sequence.
   c. The procedure and expected sequence updated to handle multi-RB combinations.

Consequences if not approved: ⌘ Not possible to test HSDPA multi radio bearer combinations.

Clauses affected: ⌘ 14.1.2 and 14.1.3.5.2

	Y	N		
Other specs Affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘ Changes introduced in T1-050467r1 are color coded in yellow.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14 Interoperability Radio Bearer Tests

14.1 General information for interoperability radio bearer tests

The purpose of the interoperability radio bearer test cases are to ensure interoperability of UE's in different regions and networks. For this purpose representative radio bearer configurations that will be used in real network implementations have been defined in TS 34.108 [9], clause 6.10.

The applicability of radio bearer tests is dependent on the UE uplink and downlink radio access capabilities and UE support tele- and bearer-services. See TS 34.123-2, annex B for applicability of the specific test cases.

14.1.1 Generic radio bearer test procedure for single RB configurations

This procedure is used to test single radio bearer configurations and speech only radio bearers. For testing of multiple radio bearer combinations as well as for testing simultaneous transmission and reception of user data and signalling data then the procedure as specified in 14.1.2 should be used.

Initial conditions

UE in idle mode

Test procedure

a) The SS establish setup the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test.

b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. See note 1.

c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test. See note 2.

d) The SS transmits, for all radio bearers under test, one or more RLC SDUs having the size equal to the "Test data size" as specified for the sub-test of the actual radio bearer test. See note 3.

e) The SS checks that, for all radio bearers under test, the content of the received RLC SDU has the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.

f) The SS opens the UE test loop.

g) Steps b) to f) are repeated for all sub-tests

h) The SS may optionally release the radio bearer.

i) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The restricted set of TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration. The restricted set of TFCIs must comply with the minimum set of TFCIs as specified in TS 25.331, clause 8.6.5.2.

NOTE 2: Selection of UL RLC SDU size parameter:
For the case when the reference radio bearer configuration under test uses RLC transperant mode in downlink and is not configured for segmented operation then the radio bearer test case shall set the UL RLC SDU size equal to the UL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transperent mode. In case the reference radio bearer configuration under test does not use RLC transparent mode then the UL RLC SDU size parameter shall be selected to achieve loop back of all test data received in the DL RLC SDU, i.e. the UL RLC SDU size is set to the nearest multiple of the payload size of the UL TF under test minus the size of the length indicator and expansion bit which is equal or bigger than the test data size. For some reference radio bearer configurations this may cause the UE to return the UL RLC SDU in more than one TTI, i.e. in case no UL TF is available to cover the UL RLC SDU size. However, as the test procedure only send downlink test data once there is no risk for the UE transmission buffer to become full even if the returned RLC SDUs need to be tranmitted in more than one TTI.

NOTE 3: Selection of test data size:
For the case when the reference radio bearer configuration under test uses RLC transperant mode in downlink and is not configured for segmented operation then the radio bearer test case shall use a DL RLC SDU size (defined by the "Test data size" parameter) equal to the DL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transperent mode. In case the reference radio bearer configuration under test does not use RLC transparent mode in downlink, the DL RLC SDU size/ test data size shall be set equal to the payload size of the DL TF under test minus the size of the length indicator and the expansion bit.

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION (BCCH)	Broadcast
2		<--	PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3		-->	RRC CONNECTION REQUEST (CCCH)	RRC
4		<--	RRC CONNECTION SETUP (CCCH)	RRC
5		-->	RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6		-->	PAGING RESPONSE (DCCH)	RR
6a		<--	AUTHENTICATION REQUEST	
6b		-->	AUTHENTICATION RESPONSE	
6c		<--	SECURITY MODE COMMAND	
6d		-->	SECURITY MODE COMPLETE	

PS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION (BCCH)	Broadcast
2		<--	PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3		-->	RRC CONNECTION REQUEST (CCCH)	RRC
4		<--	RRC CONNECTION SETUP (CCCH)	RRC
5		-->	RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6a		-->	SERVICE REQUEST (DCCH)	GMM
6b		<--	SECURITY MODE COMMAND	RRC see note 1
6c		-->	SECURITY MODE COMPLETE	RRC see note 1

Note 1 In addition to activate integrity protection Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Step	Direction		Message	Comments
	UE	SS		
1..6	<-- -->		Paging	Use the CS paging procedure for testing of CS and combined CS/PS reference radio bearer configurations. Use the PS paging procedure for testing of PS reference radio bearer configurations.
7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
9	<--		RADIO BEARER SETUP (DCCH)	RRC. Channelization code must be set to SF – 1 for the DL DPCH configured. Secondary Scrambling Code IE must be omittedFor the PS radio bearer the 'pdcp info' IE must be omitted.
10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14	<--		DOWNLINK RLC SDU	Send test data using the downlink transport format combination under test
15	-->		UPLINK RLC SDU	
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step

14.1.1a Generic radio bearer test procedure for standalone wideband AMR RB configurations

This procedure is used to test single wideband AMR radio bearer configurations.

Initial conditions

UE in idle mode

Test procedure

a) The SS establish the wideband AMR reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test. As part of the RADIO BEARER SETUP the TFC subsets as defined for the actual radio bearer configuration is setup.

b) The SS signals the "TFC subset identity" on SRB#5 as specified for the sub-test of the actual wideband AMR radio bearer test. See note 1.

c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test. See note 2.

d) The SS transmits, for all radio bearers under test, one or more RLC SDUs having the size equal to the "Test data size" as specified for the sub-test of the actual radio bearer test. See note 3.

e) The SS checks that, for all radio bearers under test, the content of the received RLC SDU has the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.

f) The SS opens the UE test loop.

g) Steps b) to f) are repeated for all sub-tests

h) The SS may optionally release the radio bearer.

i) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The TFC subset associated with the signalled “TFC subset identity” is defined by the actual wideband AMR reference radio bearer under test.

NOTE 2: Selection of UL RLC SDU size parameter:
The UL RLC SDU size parameter is set equal to the UL RLC PDU size.

NOTE 3: Selection of test data size:
The test data size is set equal to the DL RLC PDU size.

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		PAGING RESPONSE (DCCH)	RR
6a	<--		AUTHENTICATION REQUEST	
6b	-->		AUTHENTICATION RESPONSE	
6c	<--		SECURITY MODE COMMAND	
6d	-->		SECURITY MODE COMPLETE	
7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
9	<--		RADIO BEARER SETUP (DCCH)	RRC. The TFC subsets associated with the signalling of the TFC subset identity on SRB#5 aare setup as part of the RADIO BEARER SETUP message. Channelization code must be set to SF – 1 for the DL DPCH configured. Secondary Scrambling Code IE must be omitted.
10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TFS subset identity	SRB#5
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14	<--		DOWNLINK RLC SDU	Send test data using the downlink transport format combination under test
15	-->		UPLINK RLC SDU	
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step

14.1.2 Generic test procedure for testing multi-RB combinations and simultaneous signalling

This procedure is used to test multiple radio bearer combinations. This procedure is also used to verify simultaneous transmission and reception of user data and signalling data.

Initial conditions

UE in idle mode

Test procedure

a) The SS establish the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test. For the case when the reference radio bearer configuration includes radio bearers for both CS and PS domain then the radio bearer setup procedure has to be performed once per domain. The first radio bearer setup procedure shall perform configuration of the physical channel for the radio bearer combination under test as well as the transport channels for the CS radio bearer(s),also the transport format combination set for only CS radio bearers has to provided. The second radio bearer procedure shall perform the configuration for the transport channel for the PS radio bearers . The Physical channel configuration shall be done for both CS and PS radio bearers combined. Here the transport format combination set for both CS and PS radio bearers shall be provided.

b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. See note 1.

c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test. See note 2.

d) The SS starts transmitting continuous test data for all radio bearers under test. The number of RLC SDUs to transmit every TTI and the size "Test data size" is specified for each sub-test of the actual radio bearer test. See note 3.

e) The SS waits to receive an UL RLC SDU on each RB. The SS waits a maximum time of T1 for this to occur, where T1 is equal to 12 times the largest TTI. See note 4

f) SS transmits a MEASUREMENT CONTROL message requesting periodic reporting with a period of T2.

g) SS waits the time equal to 4 times T2

h) During step e) to g) the SS checks that, for all radio bearers under test, the content of the received RLC SDUs have the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.

i) The SS opens the UE test loop.

j) Steps b) to i) are repeated for all sub-tests

h) The SS may optionally release the radio bearer.

i) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The restricted set of TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration. The restricted set of TFCIs must comply with the minimum set of TFCIs as specified in TS 25.331, clause 8.6.5.2.

NOTE 2: Selection of UL RLC SDU size parameter:
For the case when the reference radio bearer configuration under test uses RLC transperant mode in downlink and is not configured for segmented operation then the radio bearer test case shall set the UL RLC SDU size equal to the UL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transperent mode. In case the reference radio bearer configuration under test does not use RLC transparent mode then, as the test procedure is based on continous downlink transmission of test data in sub-sequent TTIs, the UL RLC SDU size parameter shall be selected to adopt to the uplink data rate and to the uplink/downlink TTI ratio. Selection of UL RLC SDU size for the different radio bearers under test should be such that the UE returns data in sub-sequent TTIs without causing the UE transmission buffer to become full. To achieve this the UL RLC SDU size shall be set to UL TF payload size under test, divided by the ratio between downlink and uplink TTI , minus the size of length indicator and expansion bit, . E.g. for a AM radio bearer having the the uplink RLC payload size equal to 320, the downlink TTI equal to 10 ms, and the uplink TTI equal to 20 ms, then for the transport format 4x336 (TF payload size = 4x320=1280 bits) the UL RLC SDU size parameter should be set to 632 bits (=(1280bits/(20ms/10ms))- 8 bits).

NOTE 3: Selection of test data size:
For the case when the reference radio bearer configuration under test uses RLC transperant mode in downlink and is not configured for segmented operation then the radio bearer test case shall use a DL RLC SDU size (defined by the "Test data size" parameter) equal to the DL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transperent mode. In case the reference radio bearer configuration under test does not use RLC transparent mode in downlink, the DL RLC SDU size/ test data size shall be set equal to the payload size of the DL TF under test minus the size of the length indicator and the expansion bit.

NOTE 4: [10] TS 34.109 clause 5.3.2.9 defines the loopback delay requirement for UE test loop mode 1 to be max 10 times actual TTI of a radio bearer when RLC and MAC is operated in transparent mode. As RLC/MAC may be operated in non-transparent modes depending on the actual reference radio bearer configuration to be tested an additional 2 TTI have been added to secure that UE starts transmitting data in uplink before SS transmit the MEASUREMENT CONTROL message.

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		PAGING RESPONSE (DCCH)	RR
6a	<--		AUTHENTICATION REQUEST	
6b	-->		AUTHENTICATION RESPONSE	
6c	<--		SECURITY MODE COMMAND	
6d	-->		SECURITY MODE COMPLETE	

PS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6a	-->		SERVICE REQUEST (DCCH)	GMM
6b	<--		SECURITY MODE COMMAND	RRC see note 1
6c	-->		SECURITY MODE COMPLETE	RRC see note 1

Note 1 In addition to activate integrity protection Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Step	Direction		Message	Comments
	UE	SS		
1..6	<-- -->		Paging	Use the CS paging procedure for testing of CS and combined CS/PS reference radio bearer configurations. Use the PS paging procedure for testing of PS reference radio bearer configurations.
Case A: CS or PS radio bearers only				
A7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
A8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
A9	<--		RADIO BEARER SETUP (DCCH)	RRC Channelization code must be set to SF – 1 for the DL DPCH configured. PS radio bearer(s) are configured. For the PS radio bearer(s) the 'pdcp info' IE must be omitted. Secondary Scrambling Code IE must be omitted
A10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
Case B: CS + PS radio bearers				
B7	<--		PAGING TYPE 2 (DCCH)	TMSI (GSM-MAP)/ P-TMSI
B7a	-->		SERVICE REQUEST (DCCH)	GMM
B7b	<--		SECURITY MODE COMMAND	RRC See note
B7c	-->		SECURITY MODE COMPLETE	RRC See note
B8	<--		ACTIVATE RB TEST MODE (DCCH)	TC
B8a	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
B9	<--		RADIO BEARER SETUP (DCCH)	RRC CS radio bearer(s) are configured
B10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
B10a			Void	
B10b			Void	
B10c	<--		RADIO BEARER SETUP (DCCH)	RRC Channelization code must be set to SF – 1 for the DL DPCH configured. Secondary Scrambling Code IE must be omitted PS radio bearer(s) are configured. For the PS radio bearer the poll-SDU value must be set to 4 and the 'pdcp info' IE must be omitted.
B10d	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14a	<-- -->		Test data	SS sends continuous test data in every TTI using the downlink transport format combination under test. The number of RLC SDUs and their sizes are specified in the actual test case. SS checks returned data
14b			Wait T1	SS continues to send data every TTI and check the returned data for a maximum time of T1 for the first UL RLC SDU to be received on each RB. T1 = 12 times the max TTI in the actual radio bearer combination under test

Step	Direction		Message	Comments
	UE	SS		
15a	<--		Test data (DTCH) +	SS continues sending test data in every TTI.
	-->			
	<--		MEASUREMENT CONTROL (DCCH)	SS sends a MEASUREMENT CONTROL message simultaneously to the test data requesting periodic reporting at interval T2
15b	<--		Test data (DTCH) +	SS continues to send data in every TTI and check the returned data for time 4xT2
	-->			
	-->		MEASUREMENT REPORT (DCCH)	SS checks that at least one MEASUREMENT REPORT message is received
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE (DCCH)	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE (DCCH)	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE (DCCH)	TC Optional step
Note.	For case B (CS+PS radio bearers) the second security mode procedure is needed to enable testing of ciphering on the PS radio bearers. For the CS domain the security mode procedure is performed as part of the CS paging procedure.			

14.1.2a Generic test procedure for testing multi-RB combinations and simultaneous signalling in case of DSCH

This procedure is used to test multiple radio bearer combinations where PS data goes on the DSCH. This procedure is also used to verify simultaneous transmission and reception of user data and signaling data.

Initial conditions

UE in idle mode

Test procedure

a) The SS establish the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test. For the case when the reference radio bearer configuration includes radio bearers for both CS and PS domain then the radio bearer setup procedure has to be performed once per domain. The first radio bearer setup procedure shall perform configuration of the physical channel for the radio bearer combination under test as well as the transport channels for the CS radio bearer(s), also the transport format combination set for only CS radio bearers has to be provided. The second radio bearer procedure shall perform the configuration for the transport channel for the PS radio bearers.

b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. Here first time only the TFCs for the data on CS RAB and the data on PS RAB are restricted.

c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test. See note 1.

d) The SS transmits test data on all radio bearers under test. The number of RLC SDUs to transmit every TTI and the size "Test data size" is specified for each sub-test of the actual radio bearer test. See note 2.

e) The SS checks that UE has looped back the data on the CS and PS Radio bearer.

f) The SS opens the UE test loop.

g) SS uses the RRC transport format combination control procedure. And now restricts the TFCs for the data on CS RAB and the data on PS RAB and also on SRB.

h) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test. See note 2.

i) SS transmit data on the CS RAB a MEASUREMENT CONTROL message requesting periodic reporting with a period of T2.

j) SS transmits the data on PS RAB.

k) SS waits the time equal to 4 times T2

l) SS checks that, for all radio bearers under test, the content of the received RLC SDUs have the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loop back of RLC SDUs.

m) The SS opens the UE test loop.

n) (Void)

o) Steps b) to m) are repeated for all sub-tests

p) The SS may optionally release the radio bearer.

q) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: Selection of UL RLC SDU size parameter:
For the case when the reference radio bearer configuration under test uses RLC transparent mode in downlink and is not configured for segmented operation then the radio bearer test case shall set the UL RLC SDU size equal to the UL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transparent mode. Selection of UL RLC SDU size for the different radio bearers under test should be such that the UE returns data in sub-sequent TTIs without causing the UE transmission buffer to become full. To achieve this the UL RLC SDU size shall be set to UL TF payload size under test, minus the size of length indicator and expansion bit, and divided by the ratio between downlink and uplink TTI. E.g. for a AM radio bearer having the uplink RLC payload size equal to 320, the downlink TTI equal to 10 ms, and the uplink TTI equal to 20 ms, then for the transport format 4x336 (TF payload size = 4x320=1280 bits) the UL RLC SDU size parameter should be set to 632 bits (=1280bits/(20ms/10ms)- 8 bits).

NOTE 2: Selection of test data size:
For the case when the reference radio bearer configuration under test uses RLC transparent mode in downlink and is not configured for segmented operation then the radio bearer test case shall use a DL RLC SDU size (defined by the "Test data size" parameter) equal to the DL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transparent mode. In case the reference radio bearer configuration under test does not use RLC transparent mode in downlink, the DL RLC SDU size/ test data size shall be set equal to the payload size of the DL TF under test minus the size of the length indicator and the expansion bit.

NOTE 3: The restricted set of TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration. The restricted set of TFCIs must comply with the minimum set of TFCIs as specified in TS 25.331, clause 8.6.5.2.

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		PAGING RESPONSE (DCCH)	RR
6a	<--		AUTHENTICATION REQUEST	
6b	-->		AUTHENTICATION RESPONSE	
6c	<--		SECURITY MODE COMMAND	
6d	-->		SECURITY MODE COMPLETE	

PS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6a	-->		SERVICE REQUEST (DCCH)	GMM
6b	<--		SECURITY MODE COMMAND	RRC see note 1
6c	-->		SECURITY MODE COMPLETE	RRC see note 1

NOTE 1 In addition to activate integrity protection Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Expected sequence for DSCH multi RAB test cases.

Step	Direction		Message	Comments
	UE	SS		
1..6	<-- -->		Paging	Use the CS paging procedure for testing of CS and combined CS/PS reference radio bearer configurations. Use the PS paging procedure for testing of PS reference radio bearer configurations.
Case A: CS or PS radio bearers only				
A7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
A8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
A9	←		RADIO BEARER SETUP (DCCH)	RRC
A9	←		RADIO BEARER SETUP (DCCH)	RRC
A10	→		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
Case B: CS + PS radio bearers				
B7	<--		PAGING TYPE 2 (DCCH)	TMSI (GSM-MAP)/ P-TMSI
B7a	-->		SERVICE REQUEST (DCCH)	GMM
B7b	<--		SECURITY MODE COMMAND	RRC See note
B7c	-->		SECURITY MODE COMPLETE	RRC See note
B8	<--		ACTIVATE RB TEST MODE (DCCH)	TC
B8a	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
B9	←		RADIO BEARER SETUP (DCCH)	RRC CS radio bearer(s) are configured
B10	→		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
B10a	←		SECURITY MODE COMMAND	See Note
B10b	→		SECURITY MODE COMPLETE	RRC
B10c	←		RADIO BEARER SETUP (DCCH)	RRC PS radio bearer(s) are configured
B10c	→		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-testHere the UL TFS are restricted to test the simultaneous data on CS and PS RAB.
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14a	<--		Test data (DTCH 1) and Test data on DTCH 2	SS Sends the data on the CS RAB (DPCH).SS Sends the data on the PS RAB .(PDSCH) (Note 1)
14b	→		Test data (DTCH 1) + Test Data (DTCH 2)	SS Receives the data on CS RAB, PS RAB
14c	<--		OPEN UE TEST LOOP (DCCH)	TC
14d	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC

Step	Direction		Message	Comments
	UE	SS		
15a	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test Here the UL TFS are restricted to test the simultaneous data on CS and PS RAB and SRB
15b	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
15c	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
15d	<--		Test data (DTCH 1) and Test data on DTCH 2	SS Sends the data on the CS RAB (DPCH). SS Sends the data on the PS RAB. (PDSCH) (Note 1)
15e	←		MEASUREMENT CONTROL (DCCH)	SS sends a MEASUREMENT CONTROL message simultaneously to the test data requesting periodic reporting at interval T2 (Note 1)
15f	--> -->		Test data (DTCH 1) + Test Data (DTCH 2) MEASUREMENT REPORT (DCCH)	SS Receives the data on CS RAB, PS RAB and the Measurement Control Report. SS Shall get at least on measurement Control report.message (Note 1)
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE (DCCH)	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE (DCCH)	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE (DCCH)	TC Optional step
Note.	For case B (CS+PS radio bearers) the second security mode procedure is needed to enable testing of ciphering on the PS radio bearers. For the CS domain the security mode procedure is performed as part of the CS paging procedure.			

NOTE 1:

Here using the test steps 11 to 14d, the simultaneous data on the CS and PS RAB can be tested.

And using the steps 15a to 15f, the simultaneous data on CS RAB, PS RAB and SRB can be tested.

For testing the simultaneous data on CS RAB, PS RAB and SRB, following procedure is used.

First data on the CS RAB is sent. Then in the next step Measurement Control message is sent.

In the Downlink the restricted transport format combination will be (1 1), that SS MAC has to send the data on CS RAB and the measurement control message on SRB simultaneously.

Here it is assumed that, since the transport format combination (1, 0) (that is send only data) will not be available in the DL, the MAC has to wait until it get something to transmit on the SRB.

Then data on the PS RAB is sent.

With this on the UE UL Side, the data will be available on both CS and PS RAB and also on the SRB. With this the transport format combination (1,1, 1) that is simultaneous data on RAB and SRB can be tested in the uplink.

Specific message contents

RADIO BEARER SETUP message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS))

Information Element	Value/remark
New DSCH-RNTI	0000 0000 0000 0010B
RRC State indicator	CELL_DCH
RAB information for setup	
- RB mapping info	
- Information for each multiplexing option	1 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	Not Present
- CHOICE RLC size list	Configured
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DSCH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	19
- Logical channel identity	1
Added or Reconfigured TrCH information list	1 DCH added, 1 DCH reconfigured
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE mode	FDD
- CHOICE DL parameters	Explicit
- DL DCH TFCS	
- CHOICE TFCI signalling	Split
- Split Type	Hard
- Length of TFCI(field2)	5
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfigure	
- CHOICE CTFC Size	
- CTFC information	This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10.2.4
- CTFC	Reference to TS34.108 clause 6.10.2.4 Parameter Set
- Power offset information	Not present
- TFCI Field 2 information	
- CHOICE *Signalling method*	Explicit
- TFCS explicit configuration	
- CHOICE TFCS representation	Complete reconfiguration
- CTFC information	This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10.2.4
- CTFC	Reference to TS34.108 clause 6.10.2.4 Parameter Set
- Power offset information	Not present
Deleted TrCH information list	Not Present
Added or Reconfigured TrCH information list	
- Added or Reconfigured DL TrCH information	
- Downlink transport channel type	DSCH
- DL Transport channel identity	19
- CHOICE DL parameters	Explicit
- TFS	
- CHOICE Transport channel type	Dedicated transport channels
- Dynamic Transport format information	
- RLC Size	Reference to TS34.108 clause 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Transmission Time Interval	Not Present
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- Semi-static Transport Format information	
- Transmission time interval	Reference to TS34.108 clause 6.10 Parameter Set
- Type of channel coding	Reference to TS34.108 clause 6.10 Parameter Set
- Coding Rate	Reference to TS34.108 clause 6.10 Parameter Set
- Rate matching attribute	Reference to TS34.108 clause 6.10 Parameter Set
- CRC size	Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Value/remark
- DCH quality target	Not Present
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- CHOICE DL parameters	Same as UL
- Uplink transport channel type	DCH
- UL TrCH identity	5
- DCH quality target	
- BLER Quality value	-2.0
CHOICE channel requirement	Uplink DPCH info
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present(1)
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- Number of FBI bit	Reference to TS34.108 clause 6.10 Parameter Set
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Mode	FDD
- Downlink PDSCH information	
- PDSCH with SHO DCH Info	Not Present
- PDSCH code mapping	
- DL Scrambling Code	Primary scrambling code
- Choice *signalling method*	Explicit
- PDSCH code info	This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10.2.4
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Reference to TS34.108 clause 6.10 Parameter Set
- multi-code info	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset $P_{Pilot-DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Reference to clause 6.1 "Default settings (FDD)"
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	
- DL Scrambling Code	Primary scrambling code
- Choice *signalling method*	Explicit
- PDSCH code info	This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10.2.4
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	Reference to TS34.108 clause 6.10 Parameter Set
- multi-code info	1
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value Default DPCH Offset Value (as currently

Information Element	Value/remark
	stored in SS) mod 38400
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	1
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	0
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

14.1.3 General information interoperability radio bearer tests for HS-DSCH

14.1.3.1 HS-DSCH radio bearer test parameters

In the radio bearer tests on radio bearers mapped on HS-DSCH, the following UE specific parameters should be used.

Table 14.1.3.1.1: FDD HS-DSCH physical layer and RLC and MAC-hs parameters for FDD HS-DSCH physical layer categories

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI	Total number of soft channel bits	Supported modulation	Maximum number of AM RLC entities	Minimum total RLC AM and MAC-hs buffer size [kBytes]
UE Category 1	5	3	7298	19200	QPSK, 16QAM	6	50
UE Category 2	5	3	7298	28800	QPSK, 16QAM	6	50
UE Category 3	5	2	7298	28800	QPSK, 16QAM	6	50
UE Category 4	5	2	7298	38400	QPSK, 16QAM	6	50
UE Category 5	5	1	7298	57600	QPSK, 16QAM	6	50
UE Category 6	5	1	7298	67200	QPSK, 16QAM	6	50
UE Category 7	10	1	14411	115200	QPSK, 16QAM	8	100
UE Category 8	10	1	14411	134400	QPSK, 16QAM	8	100
UE Category 9	15	1	20251	172800	QPSK, 16QAM	8	150
UE Category 10	15	1	27952	172800	QPSK, 16QAM	8	150
UE Category 11	5	2	3630	14400	QPSK	6	50
UE Category 12	5	1	3630	28800	QPSK	6	50

14.1.3.2 Selecting TFRC test points

14.1.3.2.1 Principle

The transport format and resource combination (TFRC) is identified by the UE by the type of modulation, number of channalisation codes and the transport format and resource identifier (TFRI) signalled on the HS-SCCH.

For the HSDPA radio bearer test cases the principle for selecting typical test points for TFRC is:

1. Select one TFRC per modulation scheme and number of MAC-d PDUs.
2. For each number of MAC-d PDUs select the TFRC minimizing padding.
3. Any TFRC that would cause turbo coder irregularities should be avoided.

The problem with turbo coder regularities appears at certain coding rates. The coding rate for a certain TFCR is:

$Coding\_rate = (TB_{size} + N_{CRC}) / (N_{codes} \cdot N_{phy\_bits})$, where

TB_{size} is the selected transport block,

N_{CRC} is the number of CRC bits,

N_{codes} is the number of channelistion codes, and

N_{phy_bits} is the number physical bits per code (960 for QPSK and 1920 for 16QAM).

Table 14.1.3.2.1 lists the coding rates that cause turbo coder irregularities. In case a candidate TFRC value is causing turbo coder irregularities then the closest higher TFRI value, which do not cause any turbo coder irregularities, is selected.

Table 14.1.3.2.1: Coding rates causing degradation due to turbo coder irregularities

Coding rate	Comment
0.77-0.79	Cause loss up to 3.5 dB
0.835-0.84	Cause loss up to 1.5 dB
0.871-0.878	Cause loss up to 2 dB
0.91-0.914	Cause loss up to 2 dB

NOTE The coding rates in Table 14.2.3.2.1 is based on the simulations as described in RAN WG1 document R1-030444 (Turbo-coding and puncturing interactions on HS-DSCH in R5 HSDPA)

The selection algorithm for the TFRC test points for a certain UE category and MAC-d PDU size is:

1. Set the number of MAC-d PDUs, N_PDU, to 1
2. Calculate the minimum transport block size to fit the number of MAC-d PDUs.
3. If the transport block size is less or equal to the UE capability for “Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI” in Table 14.1.3.1.1 then continue with step 4 else there is no more testing points.
4. Select the QPSK test point:
   If it, for the actual UE category and for the selected transport block size, exists a TFRI for QPSK then select the TFRI that maximises the number of codes.
5. Select the 16QAM test point:
   If it, for the actual UE category and for the selected transport block size, exists a TFRI for 16QAM then select the TFRI that maximises the number of codes.
6. Check that the coding rate for the selected TFRC does not cause turbo coder irregularities, see Table 14.1.3.2.1. If the coding rate is ok then accept the testing point and continue with step 8 else continue with step 7.
7. If the coding rate is not ok then select the next higher TFRI value that corresponds to an acceptable coding rate. Calculate the transport block size correspondent to the modified TFRI values and if it is less or equal to the UE capability for “Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI” in Table 14.1.3.1.1 then accept the testing point else skip it.
8. Increment N_PDUs. If N_PDU is less or equal to 70 then repeat from step 2 else there is no more testing points.

14.1.3.2.2 Test procedure

a) The SS establishes the reference radio bearer configuration "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" as specified in TS 34.108, clause 6.10.2.4.5.1. See note 1.

b) The SS closes the test loop using UE test loop mode 1 setting the UL RLC SDU size parameter to 39 octets (312 bits).

c) The SS sets *M*= QPSK.

d) The SS sets $N_{\underline{codes}}$ = 1.

e) The SS sets $k_{0,i}$ to the value according to table 14.1.3.2.1 based on the actual value of *M* and $N_{\underline{codes}}$.

f) The SS sets the test parameter k_i to 0.

g) The SS calculates the index value k_t (=k_i + $k_{0,I}$) and lockup the transport block size, TB_{size}, for the actual k_t in table 7.1.5.6.3

If TB_{size} is bigger than the UE capability for "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI" then SS continues with step d) else step h). See note 2.

h) The SS calculates the maximum number of MAC-d PDUs that fits into the MAC-hs transport block:

N_{PDUs} = floor((TB_{size} – *MAC-hs_header_size)* / *MAC-d_PDU_size)*

If N_{PDUs} is bigger than 70 then SS continues with step d) else i).

i) The SS creates a MAC-hs PDU of size TB_{size} containing N_{PDUs} MAC-d PDUs + padding. The payload data of the MAC-d PDUs contains a RLC SDU of size N_{PDUs} * MAC-d PDU payload size minus 8 bits (size of 7 bit length indicator and expansion bit).

j) The SS transmits the MAC-hs PDU.

k) The SS checks that the UE returned RLC SDU has the same content as the first 312 bits of the test data sent by the SS in downlink.

l) The SS increments the test parameter k_i by 1. If k_i is less than 63 then SS repeats steps g) to l).

m) The SS increments the test parameter *N_Code by 1*. If *N_code* is less or equal to the UE capability for *"Maximum number of HS-DSCH codes received"* then the SS repeats test steps e) to m) else continue with step n). See note 2.

n) If *Modulation* = QPSK and UE capability for *"Supported modulation"* is 16QAM then the SS sets the test parameter *Modulation* to 16QAM and repeats steps d) to n) else continue with step o). See note 2.

o) The SS opens the UE test loop.

p) The SS release the radio bearer.

q) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The SS configures the physical channel parameters according to the actual UE category under test.

NOTE 2: See table Table 14.1.3.1.1 in section 14.1.3.1 for FDD HS-DSCH physical layer and RLC and MAC-hs capability parameters and there values for different UE FDD HS-DSCH physical layer categories (UE categories). The capability parameters having impact on the test procedure are: "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI", *"Maximum number of HS-DSCH codes received" and "Supported modulation"*

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		SERVICE REQUEST (DCCH)	GMM
7	<--		SECURITY MODE COMMAND	RRC see note 1
8	-->		SECURITY MODE COMPLETE	RRC see note 1
9	<--		ACTIVATE RB TEST MODE (DCCH)	TC
10	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
11	<--		RADIO BEARER SETUP (DCCH)	RRC. For the PS radio bearer the 'pdcp info' IE shall be omitted.
12	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
13	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is set to 39 octets
14	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
15	SS			The SS calculates test data for the first TFRC (TFRI,N_{codes} and *M*).
16	<--		DOWNLINK MAC-hs PDU	Send test data
17	-->		UPLINK RLC SDU	The SS checks that the content of the received UL RLC SDU is correct
18	SS			The SS calculates test data for next TFRC and repeat steps 16 to 18 until all TFRCs have been tested.
19	<--		OPEN UE TEST LOOP (DCCH)	TC
20	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
21			RB RELEASE	RRC
22	<--		DEACTIVATE RB TEST MODE	TC Optional step
23	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step
Note 1	In addition to activate integrity protection Step 6 and Step 7 are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.			

14.1.3.3 TFRC test points for MAC-d PDU size=336

Table 14.1.3.3.1: TFRC test points for UE category 1 to UE category 6 for MAC-d PDU size=336

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	365	QPSK	1	19	
2	699	QPSK	2	8	
2	699	16QAM	1	8	
3	1036	QPSK	3	7	
3	1036	16QAM	1	30	
4	1380	QPSK	4	7	
4	1380	16QAM	2	7	
5	1711	QPSK	5	6	
5	1711	16QAM	2	19	
6	2046	QPSK	5	16	
6	2046	16QAM	3	6	
7	2404	QPSK	5	25	
7	2404	16QAM	3	15	
8	2726	QPSK	5	32	
8	2726	16QAM	4	6	
9	3090	QPSK	5	39	
9	3090	16QAM	5	0	
10	3440	QPSK	5	45	
10	3440	16QAM	5	6	
11	3830	QPSK	5	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78875) would have given 3.5 dB due to turbo coder irregularities. TFRI=51 is selected.
11	3762	16QAM	5	11	
12	4115	QPSK	5	55	
12	4115	16QAM	5	16	
13	4420	QPSK	5	59	
13	4420	16QAM	5	20	
14	4748	16QAM	5	24	
15	5101	16QAM	5	28	
16	5480	16QAM	5	32	
17	5782	16QAM	5	35	
18	6101	16QAM	5	38	
19	6438	16QAM	5	41	
20	6793	16QAM	5	44	
21	7168	16QAM	5	47	

Table 14.1.3.3.2: TFRC test points for UE category 7 and UE category 8 for MAC-d PDU size=336

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	365	QPSK	1	19	
2	699	QPSK	2	8	
2	699	16QAM	1	8	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
3	1036	QPSK	3	7	
3	1036	16QAM	1	30	
4	1380	QPSK	4	7	
4	1380	16QAM	2	7	
5	1711	QPSK	5	6	
5	1711	16QAM	2	19	
6	2046	QPSK	6	6	
6	2046	16QAM	3	6	
7	2404	QPSK	7	6	
7	2404	16QAM	3	15	
8	2726	QPSK	8	6	
8	2726	16QAM	4	6	
9	3090	QPSK	10	0	
9	3090	16QAM	5	0	
10	3440	QPSK	10	6	
10	3440	16QAM	5	6	
11	3762	QPSK	10	11	
11	3762	16QAM	6	1	
12	4115	QPSK	10	16	
12	4115	16QAM	6	6	
13	4420	QPSK	10	20	
13	4420	16QAM	7	1	
14	4748	QPSK	10	24	
14	4748	16QAM	7	5	
15	5101	QPSK	10	28	
15	5101	16QAM	8	2	
16	5480	QPSK	10	32	
16	5480	16QAM	8	6	
17	5782	QPSK	10	35	
17	5782	16QAM	9	2	
18	6101	QPSK	10	38	
18	6101	16QAM	10	0	
19	6438	QPSK	10	41	
19	6438	16QAM	10	3	
20	6793	QPSK	10	44	
20	6793	16QAM	10	6	
21	7168	QPSK	10	47	
21	7168	16QAM	10	9	
22	7564	QPSK	10	50	TFRI = 49 would have minimised padding but is not acceptable as the coding rate (0.7765) would have given 3.5 dB due to turbo coder irregularities. TFRI=50 is selected.
22	7430	16QAM	10	11	
23	7981	QPSK	10	53	TFRI = 49 would have minimised padding but is not acceptable as the coding rate (0.7765) would have given 3.5 dB due to turbo coder irregularities. TFRI=50 is selected.
23	7840	16QAM	10	14	
24	8125	QPSK	10	54	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
24	8125	16QAM	10	16	
25	8422	QPSK	10	56	
25	8422	16QAM	10	18	
26	8886	QPSK	10	59	
26	8886	16QAM	10	21	
27	9210	QPSK	10	61	
27	9210	16QAM	10	23	
28	9546	16QAM	10	25	
29	9894	16QAM	10	27	
30	10255	16QAM	10	29	
31	10440	16QAM	10	30	
32	10821	16QAM	10	32	
33	11216	16QAM	10	34	
34	11625	16QAM	10	36	
35	11835	16QAM	10	37	
36	12266	16QAM	10	39	
37	12488	16QAM	10	40	
38	12943	16QAM	10	42	
39	13177	16QAM	10	43	
40	13657	16QAM	10	45	
41	13904	16QAM	10	46	
42	14155	16QAM	10	47	

Table 14.1.3.3.3: TFRC test points for UE category 9 for MAC-d PDU size=336

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	365	QPSK	1	19	
2	699	QPSK	2	8	
2	699	16QAM	1	8	
3	1036	QPSK	3	7	
3	1036	16QAM	1	30	
4	1380	QPSK	4	7	
4	1380	16QAM	2	7	
5	1711	QPSK	5	6	
5	1711	16QAM	2	19	
6	2046	QPSK	6	6	
6	2046	16QAM	3	6	
7	2404	QPSK	7	6	
7	2404	16QAM	3	15	
8	2726	QPSK	8	6	
8	2726	16QAM	4	6	
9	3090	QPSK	10	0	
9	3090	16QAM	5	0	
10	3440	QPSK	11	1	
10	3440	16QAM	5	6	
11	3762	QPSK	12	1	
11	3762	16QAM	6	1	
12	4115	QPSK	13	2	
12	4115	16QAM	6	6	
13	4420	QPSK	14	1	
13	4420	16QAM	7	1	
14	4748	QPSK	15	2	
14	4748	16QAM	7	5	
15	5101	QPSK	15	6	
15	5101	16QAM	8	2	
16	5480	QPSK	15	10	
16	5480	16QAM	8	6	
17	5782	QPSK	15	13	
17	5782	16QAM	9	2	
18	6101	QPSK	15	16	
18	6101	16QAM	10	0	
19	6438	QPSK	15	19	
19	6438	16QAM	10	3	
20	6793	QPSK	15	22	
20	6793	16QAM	11	0	
21	7168	QPSK	15	25	
21	7168	16QAM	11	3	
22	7430	QPSK	15	27	
22	7430	16QAM	12	0	
23	7840	QPSK	15	30	
23	7840	16QAM	12	3	
24	8125	QPSK	15	32	
24	8125	16QAM	13	1	
25	8422	QPSK	15	34	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
25	8422	16QAM	13	3	
26	8886	QPSK	15	37	
26	8886	16QAM	14	2	
27	9210	QPSK	15	39	
27	9210	16QAM	15	0	
28	9546	QPSK	15	41	
28	9546	16QAM	15	2	
29	9894	QPSK	15	43	
29	9894	16QAM	15	4	
30	10255	QPSK	15	45	
30	10255	16QAM	15	6	
31	10440	QPSK	15	46	
31	10440	16QAM	15	7	
32	10821	QPSK	15	48	
32	10821	16QAM	15	9	
33	11418	QPSK	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78056) would have given 3.5 dB due to turbo coder irregularities. TFRI=51 is selected.
33	11216	16QAM	15	11	
34	11625	QPSK	15	52	
34	11625	16QAM	15	13	
35	11835	QPSK	15	53	
35	11835	16QAM	15	14	
36	12266	QPSK	15	55	
36	12266	16QAM	15	16	
37	12488	QPSK	15	56	
37	12488	16QAM	15	17	
38	12943	QPSK	15	58	
38	12943	16QAM	15	19	
39	13177	QPSK	15	59	
39	13177	16QAM	15	20	
40	13657	QPSK	15	61	
40	13657	16QAM	15	22	
41	13904	QPSK	15	62	
41	13904	16QAM	15	23	
42	14155	16QAM	15	24	
43	14671	16QAM	15	26	
44	14936	16QAM	15	27	
45	15206	16QAM	15	28	
46	15481	16QAM	15	29	
47	16045	16QAM	15	31	
48	16335	16QAM	15	32	
49	16630	16QAM	15	33	
50	16931	16QAM	15	34	
51	17237	16QAM	15	35	
52	17548	16QAM	15	36	
53	17865	16QAM	15	37	
54	18188	16QAM	15	38	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
55	18517	16QAM	15	39	
56	18851	16QAM	15	40	
57	19192	16QAM	15	41	
58	19538	16QAM	15	42	
59	19891	16QAM	15	43	
60	20251	16QAM	15	44	

Table 14.1.3.3.4: TFRC test points for UE category 10 for MAC-d PDU size=336

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	365	QPSK	1	19	
2	699	QPSK	2	8	
2	699	16QAM	1	8	
3	1036	QPSK	3	7	
3	1036	16QAM	1	30	
4	1380	QPSK	4	7	
4	1380	16QAM	2	7	
5	1711	QPSK	5	6	
5	1711	16QAM	2	19	
6	2046	QPSK	6	6	
6	2046	16QAM	3	6	
7	2404	QPSK	7	6	
7	2404	16QAM	3	15	
8	2726	QPSK	8	6	
8	2726	16QAM	4	6	
9	3090	QPSK	10	0	
9	3090	16QAM	5	0	
10	3440	QPSK	11	1	
10	3440	16QAM	5	6	
11	3762	QPSK	12	1	
11	3762	16QAM	6	1	
12	4115	QPSK	13	2	
12	4115	16QAM	6	6	
13	4420	QPSK	14	1	
13	4420	16QAM	7	1	
14	4748	QPSK	15	2	
14	4748	16QAM	7	5	
15	5101	QPSK	15	6	
15	5101	16QAM	8	2	
16	5480	QPSK	15	10	
16	5480	16QAM	8	6	
17	5782	QPSK	15	13	
17	5782	16QAM	9	2	
18	6101	QPSK	15	16	
18	6101	16QAM	10	0	
19	6438	QPSK	15	19	
19	6438	16QAM	10	3	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
20	6793	QPSK	15	22	
20	6793	16QAM	11	0	
21	7168	QPSK	15	25	
21	7168	16QAM	11	3	
22	7430	QPSK	15	27	
22	7430	16QAM	12	0	
23	7840	QPSK	15	30	
23	7840	16QAM	12	3	
24	8125	QPSK	15	32	
24	8125	16QAM	13	1	
25	8422	QPSK	15	34	
25	8422	16QAM	13	3	
26	8886	QPSK	15	37	
26	8886	16QAM	14	2	
27	9210	QPSK	15	39	
27	9210	16QAM	15	0	
28	9546	QPSK	15	41	
28	9546	16QAM	15	2	
29	9894	QPSK	15	43	
29	9894	16QAM	15	4	
30	10255	QPSK	15	45	
30	10255	16QAM	15	6	
31	10440	QPSK	15	46	
31	10440	16QAM	15	7	
32	10821	QPSK	15	48	
32	10821	16QAM	15	9	
33	11418	QPSK	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78056) would have given 3.5 dB due to turbo coder irregularities. TFRI=51 is selected.
33	11216	16QAM	15	11	
34	11625	QPSK	15	52	
34	11625	16QAM	15	13	
35	11835	QPSK	15	53	
35	11835	16QAM	15	14	
36	12266	QPSK	15	55	
36	12266	16QAM	15	16	
37	12488	QPSK	15	56	
37	12488	16QAM	15	17	
38	12943	QPSK	15	58	
38	12943	16QAM	15	19	
39	13177	QPSK	15	59	
39	13177	16QAM	15	20	
40	13657	QPSK	15	61	
40	13657	16QAM	15	22	
41	13904	QPSK	15	62	
41	13904	16QAM	15	23	
42	14155	16QAM	15	24	
43	14671	16QAM	15	26	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
44	14936	16QAM	15	27	
45	15206	16QAM	15	28	
46	15481	16QAM	15	29	
47	16045	16QAM	15	31	
48	16335	16QAM	15	32	
49	16630	16QAM	15	33	
50	16931	16QAM	15	34	
51	17237	16QAM	15	35	
52	17548	16QAM	15	36	
53	17865	16QAM	15	37	
54	18188	16QAM	15	38	
55	18517	16QAM	15	39	
56	18851	16QAM	15	40	
57	19192	16QAM	15	41	
58	19538	16QAM	15	42	
59	19891	16QAM	15	43	
60	20251	16QAM	15	44	
61	20617	16QAM	15	45	
62	20989	16QAM	15	46	
63	21368	16QAM	15	47	
64	21754	16QAM	15	48	
65	22147	16QAM	15	49	
66	22955	16QAM	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78375) would have given 3.5 dB due to turbo coder irregularities. TFRI=51 is selected.
67	22955	16QAM	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78375) would have given 3.5 dB due to turbo coder irregularities. TFRI=51 is selected.
68	22955	16QAM	15	51	
69	23370	16QAM	15	52	
70	23792	16QAM	15	53	

Table 14.1.3.3.5: TFRC test points for UE category 11 and UE category 12 for MAC-d PDU size=336

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	365	QPSK	1	19	
2	699	QPSK	2	8	
3	1036	QPSK	3	7	
4	1380	QPSK	4	7	
5	1711	QPSK	5	6	
6	2046	QPSK	5	16	
7	2404	QPSK	5	25	
8	2726	QPSK	5	32	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
9	3090	QPSK	5	39	
10	3440	QPSK	5	45	

14.1.3.4 TFRC test points for MAC-d PDU size=656

Table 14.1.3.4.1: TFRC test points for UE category 1 to UE category 6 for MAC-d PDU size=656

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	686	QPSK	2	7	
1	686	16QAM	1	7	
2	1356	QPSK	4	6	
2	1356	16QAM	2	6	
3	2010	QPSK	5	15	
3	2010	16QAM	3	5	
4	2677	QPSK	5	31	
4	2677	16QAM	4	5	
5	3319	QPSK	5	43	
5	3319	16QAM	5	4	
6	3970	QPSK	5	53	
6	3970	16QAM	5	14	
7	4664	QPSK	5	62	
7	4664	16QAM	5	23	
8	5287	16QAM	5	30	
9	5993	16QAM	5	37	
10	6673	16QAM	5	43	
11	7298	16QAM	5	48	

Table 14.1.3.4.2: TFRC test points for UE category 7 and UE category 8 for MAC-d PDU size=656

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	686	QPSK	2	7	
1	686	16QAM	1	7	
2	1356	QPSK	4	6	
2	1356	16QAM	2	6	
3	2010	QPSK	6	5	
3	2010	16QAM	3	5	
4	2677	QPSK	8	5	
4	2677	16QAM	4	5	
5	3319	QPSK	10	4	
5	3319	16QAM	5	4	
6	3970	QPSK	5	53	
6	3970	QPSK	10	14	
6	3970	16QAM	6	4	
7	4664	QPSK	5	62	
7	4664	QPSK	10	23	
7	4664	16QAM	7	4	
8	5287	QPSK	10	30	
8	5287	16QAM	8	4	
9	5993	QPSK	10	37	
9	5993	16QAM	9	4	
10	6673	QPSK	10	43	
10	6673	16QAM	10	5	
11	7298	QPSK	10	48	
11	7298	16QAM	10	10	
12	7981	QPSK	10	53	
12	7981	16QAM	10	15	
13	8574	QPSK	10	57	
13	8574	16QAM	10	19	
14	9210	QPSK	10	61	
14	9210	16QAM	10	23	
15	9894	16QAM	10	27	
16	10629	16QAM	10	31	
17	11216	16QAM	10	34	
18	11835	16QAM	10	37	
19	12488	16QAM	10	40	
20	13177	16QAM	10	43	
21	13904	16QAM	10	46	

Table 14.1.3.4.3: TFRC test points for UE category 9 for MAC-d PDU size=656

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	686	QPSK	2	7	
1	686	16QAM	1	7	
2	1356	QPSK	4	6	
2	1356	16QAM	2	6	
3	2010	QPSK	6	5	
3	2010	16QAM	3	5	
4	2677	QPSK	8	5	
4	2677	16QAM	4	5	
5	3319	QPSK	10	4	
5	3319	16QAM	5	4	
6	3970	QPSK	5	53	
6	3970	QPSK	13	0	
6	3970	16QAM	6	4	
7	4664	QPSK	5	62	
7	4664	QPSK	15	1	
7	4664	16QAM	7	4	
8	5287	QPSK	15	8	
8	5287	16QAM	8	4	
9	5993	QPSK	15	15	
9	5993	QPSK	15	15	
9	5993	16QAM	9	4	
9	5993	QPSK	15	15	
10	6673	QPSK	15	21	
10	6673	16QAM	10	5	
9	5993	QPSK	15	15	
11	7298	QPSK	15	26	
11	7298	16QAM	11	4	
9	5993	QPSK	15	15	
12	7981	QPSK	15	31	
12	7981	16QAM	13	0	
9	5993	QPSK	15	15	
13	8574	QPSK	15	35	
13	8574	16QAM	14	0	
9	5993	QPSK	15	15	
14	9210	QPSK	15	39	
14	9210	16QAM	15	0	
15	9894	QPSK	15	43	
15	9894	16QAM	15	4	
16	10629	QPSK	15	47	
16	10629	16QAM	15	8	
17	11418	QPSK	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.7806) would have given 3.5 dB due to turbo coder irregularities TFRI=51 is selected.
17	11216	16QAM	15	11	
18	11835	QPSK	15	53	
18	11835	16QAM	15	14	
19	12488	QPSK	15	56	

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
19	12488	16QAM	15	17	
20	13177	QPSK	15	59	
20	13177	16QAM	15	20	
21	13904	QPSK	15	62	
21	13904	16QAM	15	23	
22	14671	16QAM	15	26	
23	15206	16QAM	15	28	
24	16045	16QAM	15	31	
25	16630	16QAM	15	33	
26	17237	16QAM	15	35	
27	17865	16QAM	15	37	
28	18517	16QAM	15	39	
29	19192	16QAM	15	41	
30	19891	16QAM	15	43	

Table 14.1.3.4.4: TFRC test points for UE category 10 for MAC-d PDU size=656

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	686	QPSK	2	7	
1	686	16QAM	1	7	
2	1356	QPSK	4	6	
2	1356	16QAM	2	6	
3	2010	QPSK	6	5	
3	2010	16QAM	3	5	
4	2677	QPSK	8	5	
4	2677	16QAM	4	5	
5	3319	QPSK	10	4	
5	3319	16QAM	5	4	
6	3970	QPSK	5	53	
6	3970	QPSK	13	0	
6	3970	16QAM	6	4	
7	4664	QPSK	5	62	
7	4664	QPSK	15	1	
7	4664	16QAM	7	4	
8	5287	QPSK	15	8	
8	5287	16QAM	8	4	
9	5993	QPSK	15	15	
9	5993	QPSK	15	15	
9	5993	16QAM	9	4	
9	5993	QPSK	15	15	
10	6673	QPSK	15	21	
10	6673	16QAM	10	5	
9	5993	QPSK	15	15	
11	7298	QPSK	15	26	
11	7298	16QAM	11	4	
9	5993	QPSK	15	15	
12	7981	QPSK	15	31	

12	7981	16QAM	13	0	
9	5993	QPSK	15	15	
13	8574	QPSK	15	35	
13	8574	16QAM	14	0	
9	5993	QPSK	15	15	
14	9210	QPSK	15	39	
14	9210	16QAM	15	0	
15	9894	QPSK	15	43	
15	9894	16QAM	15	4	
16	10629	QPSK	15	47	
16	10629	16QAM	15	8	
17	11418	QPSK	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.7806) would have given 3.5 dB due to turbo coder irregularities TFRI=51 is selected.
17	11216	16QAM	15	11	
18	11835	QPSK	15	53	
18	11835	16QAM	15	14	
19	12488	QPSK	15	56	
19	12488	16QAM	15	17	
20	13177	QPSK	15	59	
20	13177	16QAM	15	20	
21	13904	QPSK	15	62	
21	13904	16QAM	15	23	
22	14671	16QAM	15	26	
23	15206	16QAM	15	28	
24	16045	16QAM	15	31	
25	16630	16QAM	15	33	
26	17237	16QAM	15	35	
27	17865	16QAM	15	37	
28	18517	16QAM	15	39	
29	19192	16QAM	15	41	
30	19891	16QAM	15	43	
31	20617	16QAM	15	45	
32	21368	16QAM	15	47	
33	21754	16QAM	15	48	
34	22955	16QAM	15	51	TFRI = 50 would have minimised padding but is not acceptable as the coding rate (0.78375) would have given 3.5 dB due to turbo coder irregularities TFRI=51 is selected.
35	23370	16QAM	15	52	
36	23792	16QAM	15	53	
37	24659	16QAM	15	55	
38	25558	16QAM	15	57	TFRI = 56 would have minimised padding but is not acceptable as the coding rate (0.8725) would have given 2 dB due to turbo coder irregularities TFRI=57 is selected.
39	26020	16QAM	15	58	
40	26490	16QAM	15	59	
41	26969	16QAM	15	60	
42	27952	16QAM	15	62	

Table 14.1.3.4.5: TFRC test points for UE category 11 and UE category 12 for MAC-d PDU size=656

Number of MAC-d PDUs	Selected transport block size [bits]	Modulation scheme	Number of codes	TFRI	Comments
1	686	QPSK	2	7	
2	1356	QPSK	4	6	
3	2010	QPSK	5	15	
4	2677	QPSK	5	31	
5	3319	QPSK	5	43	

14.1.3.5 Generic test procedure for ~~single~~ HS-DSCH radio bearer combinations~~configurations~~

This procedure is used to test ~~single~~ HS-DSCH radio bearer combinations~~configurations~~. The procedure is run once for each sub-test of the actual HS-DSCH radio bearer test case.

Definition of test variables:

N_{codes}	Number of HS-DSCH codes (1..15, maximum number dependent on UE category)
M	Type of modulation scheme (QPSK, 16QAM)
TB_{size}	Transport Block size
N_{PDUs}	Number of MAC-d PDUs
H_{ID}	HARQ process identifier (0..7)

14.1.3.5.1 Initial conditions

UE in idle mode

14.1.3.5.2 Test procedure

a) The SS establish the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test. For the case when the reference radio bearer configuration includes radio bearers for both CS and PS domain then the radio bearer setup procedure has to be performed once per domain. The first radio bearer setup procedure shall perform configuration of the physical channel for the radio bearer combination under test as well as the transport channels for the CS radio bearer(s). The second radio bearer procedure shall perform the configuration for the transport channel for the PS radio bearers . The Physical channel configuration shall be done for both CS and PS radio bearers combined. Here the transport format combination set for both CS and PS radio bearers shall be provided. See note 1 and note 3.

~~a) The SS establishes the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test. See note 1.~~

b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. See note 2.

c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test.

d) The SS selects the first TFRC test point (N_{PDUs} , M, N_{codes} and TFRI) according to the applicable table in sub-clauses 14.1.3.3 (MAC-d PDU size=336) or 14.1.3.4 (MAC-d PDU size=656).

e) The SS sets H_{ID} = 0.

f) The SS creates ~~a~~4 DL RLC SDUs of size (N_{PDUs} * MAC-d PDU payload size) / 4 minus 8 bits (size of 7 bit length indicator and expansion bit). See note 4.

g) The SS transmits, for each DTCH mapped to HS-DSCH, ~~a MAC-hs PDU containing the DL~~ 4 RLC SDUs concatenated into a MAC-hs PDU using the selected TFRC and H_{ID}. If the radio bearer combination under test includes downlink DTCHs mapped to DCH then the SS transmits, for all DTCHs mapped to DCH, one or more RLC SDUs having the size equal to the "Test data size" as specified for the sub-test of the actual radio bearer test case.

h) The SS checks that the content of the UE returned RLC SDUs have~~s~~ the correct content and are~~is~~ received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.

i) The SS sets H_{ID} = (H_{ID} + 1) modulo Max_H_{ID}, where Max_H_{ID} equals the number of HARQ processes to be verified by the actual sub-test

j) The SS repeats steps f) to i) for the remaining TFRC test point (N_{PDUs} , M, N_{codes} and TFRI) according to the applicable table in sub-clauses 14.1.3.3 (MAC-d PDU size=336) or 14.1.3.4 (MAC-d PDU size=656) for the UE category and MAC-d PDU size under test.

k) The SS opens the UE test loop.

l) The SS release the radio bearer.

m) Steps a) to l) are repeated for all sub-tests.

n) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The SS configures the physical channel parameters according to the actual UE category under test. The number of soft channel bits per HARQ process is split equally among the number of HARQ processes configured for the actual sub-test - i.e. “Total number of soft channel bits” for the UE category according to table 14.1.3.1.1 divided by the number of HARQ processes under test. The number of reordering queues are 1 for single HS-DSCH radio bearer configurations. The MAC-hs window size, RLC Transmission window size and RLC Receiving window size shall be configured as specified for the actual sub-test.

NOTE 2: The restricted set of uplink TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration. The restricted set of TFCIs must comply with the minimum set of TFCIs as specified in TS 25.331, clause 8.6.5.2.

NOTE 3: The MAC-hs window size and RLC Receiver and transmitter window sizes need to be chosen such that the UE capability for “Minimum total RLC AM and MAC-hs buffer size” is not exceeded for the UE category under test.

NOTE 4: The test data for DTCHs mapped on HS-DSCH is divided into 4 RLC SDUs to keep the maximum SDU size below or equal to 1500 octets (1500 octets is the limit of QoS parameter “Max SDU size” in SM).

Expected sequence (repeated for each sub-test)

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION (BCCH)	Broadcast
2		<--	PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3		-->	RRC CONNECTION REQUEST (CCCH)	RRC
4		<--	RRC CONNECTION SETUP (CCCH)	RRC
5		-->	RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6		-->	SERVICE REQUEST (DCCH)	GMM
7		<--	SECURITY MODE COMMAND	RRC see note 1
8		-->	SECURITY MODE COMPLETE	RRC see note 1
~~9~~		~~<--~~	~~ACTIVATE RB TEST MODE (DCCH)~~	~~TC~~
~~10~~		~~-->~~	~~ACTIVATE RB TEST MODE COMPLETE (DCCH)~~	~~TC~~
~~11~~		~~<--~~	~~RADIO BEARER SETUP (DCCH)~~	~~RRC. For the PS radio bearer the 'pdcp info' IE must be omitted.~~
~~12~~		~~-->~~	~~RADIO BEARER SETUP COMPLETE (DCCH)~~	~~RRC~~
Case A: PS radio bearers only				
A9		<--	ACTIVATE RB TEST MODE (DCCH)	TC
A10		-->	ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
A11		<--	RADIO BEARER SETUP (DCCH)	RRC Channelization code must be set to SF – 1 for the DL DPCH configured. PS radio bearer(s) are configured. For the PS radio bearer(s) the 'pdcp info' IE must be omitted. Secondary Scrambling Code IE must be omitted
A12		-->	RADIO BEARER SETUP COMPLETE (DCCH)	RRC
End of branch for Case A				
Case B: CS + PS radio bearers				
B9		<--	PAGING TYPE 2 (DCCH)	TMSI (GSM-MAP)/ P-TMSI
B9a		-->	SERVICE REQUEST (DCCH)	GMM
B9b		<--	SECURITY MODE COMMAND	RRC See note 2
B9c		-->	SECURITY MODE COMPLETE	RRC
B10		<--	ACTIVATE RB TEST MODE (DCCH)	TC
B10a		-->	ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
B11		<--	RADIO BEARER SETUP (DCCH)	RRC CS radio bearer(s) are configured
B12		-->	RADIO BEARER SETUP COMPLETE (DCCH)	RRC
B12a		<--	RADIO BEARER SETUP (DCCH)	RRC Channelization code must be set to SF – 1 for the DL DPCH configured. Secondary Scrambling Code IE must be omitted PS radio bearer(s) are configured. For the PS radio bearer the poll-SDU value must be set to 4 and the 'pdcp info' IE must be omitted.
B12b		-->	RADIO BEARER SETUP COMPLETE (DCCH)	RRC
End of branch for Case B				
13		<--	TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
14		<--	CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
15		-->	CLOSE UE TEST LOOP COMPLETE (DCCH)	TC

Step	Direction		Message	Comments
	UE	SS		
16	SS			For each DTCHs mapped on HS-DSCH ~~T~~the SS creates~~calculates~~ test data for the first TFRC. The test data shall be dived into 4 RLC SDUs of size (N_{PDUs} * MAC-d PDU payload size) / 4 - 8 bits. The SS sets H_{ID} = 0.
17	<--		DOWNLINK MAC-hs PDU (HS-DSCH#1) … DOWNLINK MAC-hs PDU (HS-DSCH#N) DL RLC SDU (DL DCH#1) … DL RLC SDU (DL DCH#M)	For each DTCH mapped on HS-DSCH the SS ~~S~~sends test data divided into 4 RLC SDUs for HARQ processe $H_{ID.}$ For each DTCH mapped on DCH the SS sends test data using the downlink transport format combination under test .
18	-->		UPLINK RLC SDUs	The SS checks, for each DTCH, that the content and transport format of the received UL RLC SDUs are~~is~~ correct.
19	SS			The SS sets H_{ID} = (H_{ID} + 1) modulo $Max\_H_{ID.}$ The SS creates~~calculates~~ test data for the next TFRC and repeat steps 17 to 18 until all TFRCs have been tested.
20	<--		OPEN UE TEST LOOP (DCCH)	TC
21	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
22			RB RELEASE	RRC
23	<--		DEACTIVATE RB TEST MODE	TC Optional step
24	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step

Note 1 In addition to activate integrity protection Step 6 and Step 7 are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Note 2 For case B (CS+PS radio bearers) the second security mode procedure is needed to enable testing of ciphering on the PS radio bearers.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050468

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1138 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Addition of details to HSDPA radio bearer test case 14.6.3
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	4/2/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Details missing in HSDPA radio bearer test case 14.6.3
Summary of change:	⌘	Details added to HSDPA radio bearer test case 14.6.3 based on the generic test procedure for HS-DSCH multi-RB combinations introduced by CR in T1-050467.
Consequences if not approved:	⌘	Test case not complete.

Clauses affected:	⌘	14.6.3

	Y	N		
Other specs Affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14.6.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.3.1 Conformance requirement

See 14.6.1.1.

14.6.3.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.3.

14.6.3.3 Method of test

~~FFS~~ The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (384 kbps, 10 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	4x336	N/A
	TF4, bits	N/A	N/A	N/A	8x336	N/A
	TF5, bits	N/A	N/A	N/A	12x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF5, TF0)
UL_TFC16	(TF1, TF0, TF0, TF5, TF0)
UL_TFC17	(TF2, TF1, TF1, TF5, TF0)
UL_TFC18	(TF0, TF0, TF0, TF0, TF1)
UL_TFC19	(TF1, TF0, TF0, TF0, TF1)
UL_TFC20	(TF2, TF1, TF1, TF0, TF1)
UL_TFC21	(TF0, TF0, TF0, TF1, TF1)
UL_TFC22	(TF1, TF0, TF0, TF1, TF1)
UL_TFC23	(TF2, TF1, TF1, TF1, TF1)
UL_TFC24	(TF0, TF0, TF0, TF2, TF1)
UL_TFC25	(TF1, TF0, TF0, TF2, TF1)
UL_TFC26	(TF2, TF1, TF1, TF2, TF1)
UL_TFC27	(TF0, TF0, TF0, TF3, TF1)
UL_TFC28	(TF1, TF0, TF0, TF3, TF1)
UL_TFC29	(TF2, TF1, TF1, TF3, TF1)
UL_TFC30	(TF0, TF0, TF0, TF4, TF1)
UL_TFC31	(TF1, TF0, TF0, TF4, TF1)
UL_TFC32	(TF2, TF1, TF1, TF4, TF1)
UL_TFC33	(TF0, TF0, TF0, TF5, TF1)
UL_TFC34	(TF1, TF0, TF0, TF5, TF1)
UL_TFC35	(TF2, TF1, TF1, TF5, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech and Interactive Background radio bearer. As the Interactive Background UL:384 kbps radio bearer (RB8) has the highest number of transport formats (5 for TTI=10 ms and excluding TF0) then 5 sub-tests has been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB8 and for the different speech transport formats are: UL_TFC4 for TF1, UL_TFC8 for TF2, UL_TFC11 for TF3, UL_TFC13 for TF4 and UL_TFC17 for TF5.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC18, UL_TFC22	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC2	UL_TFC8	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC18, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	DL_TFC2	UL_TFC11	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC18, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	DL_TFC1	UL_TFC13	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC18	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC18, UL_TFC31	RB5: 39 RB6: 103 RB7: 60 RB8: 2552	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							
5	1	8	256	256	656	DL_TFC2	UL_TFC17	DL_TFC0, DL_TFC3, UL_TFC0,	UL_TFC0, UL_TFC1, UL_TFC2,	RB5: 81 RB6: 103 RB7: 60	RB5: 81 RB6: 103 RB7: 60
	2	8	256	256							
	3	8	256	256							

	4	8	256	256				UL_TFC18	UL_TFC3, UL_TFC17, UL_TFC18, UL_TFC35	RB8: 3832	RB8: See note 4
	5	8	256	256							
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC18 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB8: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB8 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.3.4 Test requirements

~~FFS~~See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
   - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 1272 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 2552 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
   - for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 3832 bits of the test data sent by the SS in downlink.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050470

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1134 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Correction to MAC-hs test cases 7.1.5.6
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	2/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The test procedure for the MAC-hs test case 7.1.5.6 as introduced at T1#25 by the approved CR in T1-041962 included an incorrect clause number causing it to be placed in section 14.1.3.2 of 34.123-1 when V5.10.0 of 34.123-1 was created. The current test procedure use RLC SDUs exceeding the SM limit for maximum SDU size (1500 octets).
Summary of change:	⌘	Test procedure added with the same content as specified the CR in T1-041962 approved at T1#25, with the exception of: 1. Test procedure: a. Step i) changed to use 4 RLC SDUs to create the MAC-d PDU to avoid that RLC SDU size exceeds 1500 octets b. Note 3 added describing the rationale for using 4 RLC SDUs to fill the MAC-d PDU. 2. Expected sequence: a. Step 16 updated indicating that 4 RLC SDUs are used.
Consequences if not approved:	⌘	Test case not completely specified.

Clauses affected:	⌘	7.1.5.6

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications
Other comments:	⌘	An associated CR is provided in T1-050425 to remove the test procedure from section 14.1.3.2.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.5.6 MAC-hs transport block size selection

7.1.5.6.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.6.2 Conformance requirement

For HS-DSCH the transport block size is derived from the value signalled on the HS-SCCH. The mapping between the TFRI value and the transport block size for each mode is specified below:

For all transmissions of a transport block, the transport block size is derived from the TFRI value as specified below, except only in those cases of retransmissions where the Node-B selects a combination for which no mapping exists between the original transport block size and the selected combination of channelisation Code set and modulation type. In such cases, the transport block size index value signalled to the UE shall be set to 111111, i.e., k_i=63.

Let k_i be the TFRI signalled on the HS-SCCH value and let $k_{0,i}$ be the value in the table 7.1.5.6.1 corresponding to the modulation and the number of codes signalled on the HS-SCCH. Let k_t be the sum of the two values: $k_t = k_i + k_{0,i}$. The transport block size $L(k_t)$ can be obtained by accessing the position k_t in the table in Annex A (normative) or by using the formula below (informative):

If $k_t < 40$

$$L(k_t) = 125 + 12 \cdot k_t$$

else

$$L(k_t) = \lfloor L_{\min} p^{k_t} \rfloor$$

$$p = 2085/2048$$

$$L_{\min} = 296$$

end

Table 7.1.5.6.1: Values of $k_{0,i}$ for different numbers of channelization codes and modulation schemes

Combination i	Modulation scheme	Number of channelization codes	$k_{0,i}$
0	QPSK	1	1
1		2	40
2		3	63
3		4	79
4		5	92
5		6	102
6		7	111
7		8	118
8		9	125
9		10	131
10		11	136
11		12	141
12		13	145
13		14	150
14		15	153
15	16QAM	1	40
16		2	79
17		3	102

18		4	118
19		5	131
20		6	141
21		7	150
22		8	157
23		9	164
24		10	169
25		11	175
26		12	180
27		13	184
28		14	188
29		15	192

……

The following table provides the mapping between k_t (as per the definition above) and the HS-DSCH Transport Block Size ($L(k_t)$):

Index	TB Size	Index	TB Size	Index	TB Size
1	137	86	1380	171	6324
2	149	87	1405	172	6438
3	161	88	1430	173	6554
4	173	89	1456	174	6673
5	185	90	1483	175	6793
6	197	91	1509	176	6916
7	209	92	1537	177	7041
8	221	93	1564	178	7168
9	233	94	1593	179	7298
10	245	95	1621	180	7430
11	257	96	1651	181	7564
12	269	97	1681	182	7700
13	281	98	1711	183	7840
14	293	99	1742	184	7981
15	305	100	1773	185	8125
16	317	101	1805	186	8272
17	329	102	1838	187	8422
18	341	103	1871	188	8574
19	353	104	1905	189	8729
20	365	105	1939	190	8886
21	377	106	1974	191	9047
22	389	107	2010	192	9210
23	401	108	2046	193	9377
24	413	109	2083	194	9546
25	425	110	2121	195	9719
26	437	111	2159	196	9894
27	449	112	2198	197	10073
28	461	113	2238	198	10255
29	473	114	2279	199	10440
30	485	115	2320	200	10629
31	497	116	2362	201	10821
32	509	117	2404	202	11017
33	521	118	2448	203	11216
34	533	119	2492	204	11418
35	545	120	2537	205	11625
36	557	121	2583	206	11835

37	569	122	2630	207	12048
38	581	123	2677	208	12266
39	593	124	2726	209	12488
40	605	125	2775	210	12713
41	616	126	2825	211	12943
42	627	127	2876	212	13177
43	639	128	2928	213	13415
44	650	129	2981	214	13657
45	662	130	3035	215	13904
46	674	131	3090	216	14155
47	686	132	3145	217	14411
48	699	133	3202	218	14671
49	711	134	3260	219	14936
50	724	135	3319	220	15206
51	737	136	3379	221	15481
52	751	137	3440	222	15761
53	764	138	3502	223	16045
54	778	139	3565	224	16335
55	792	140	3630	225	16630
56	806	141	3695	226	16931
57	821	142	3762	227	17237
58	836	143	3830	228	17548
59	851	144	3899	229	17865
60	866	145	3970	230	18188
61	882	146	4042	231	18517
62	898	147	4115	232	18851
63	914	148	4189	233	19192
64	931	149	4265	234	19538
65	947	150	4342	235	19891
66	964	151	4420	236	20251
67	982	152	4500	237	20617
68	1000	153	4581	238	20989
69	1018	154	4664	239	21368
70	1036	155	4748	240	21754
71	1055	156	4834	241	22147
72	1074	157	4921	242	22548
73	1093	158	5010	243	22955
74	1113	159	5101	244	23370
75	1133	160	5193	245	23792
76	1154	161	5287	246	24222
77	1175	162	5382	247	24659
78	1196	163	5480	248	25105
79	1217	164	5579	249	25558
80	1239	165	5680	250	26020
81	1262	166	5782	251	26490
82	1285	167	5887	252	26969
83	1308	168	5993	253	27456
84	1331	169	6101	254	27952
85	1356	170	6211		

Reference(s)

3GPP TS 25.321, 9.2.3, 9.2.3.1 and Annex A

7.1.5.6.3 Test purpose

To verify that the UE selects the correct transport block size based on the TFRI value signalled on the HS-SCCH.

7.1.5.6.4 Method of test

Definition of test variables:

$N_{\underline{codes}}$	Number of HS-DSCH codes (1..15, maximum number dependent on UE category)
M	Type of modulation scheme (QPSK, 16QAM)
k_i	TFRI signalled on the HS-SCCH value
$K_{0,I}$	See table 7.1.5.6.2
k_t	Transport Block Size index $(=k_i + k_{0,I})$, see table 7.1.5.6.3
TB_{size}	Transport Block size
N_{PDUs}	Number of MAC-d PDUs
MAC-hs_header_size	MAC-hs header size for the reference HS-DSCH radio bearer configuration under test.
MAC-d_PDU_size	MAC-d PDU size for the reference HS-DSCH radio bearer configuration under test.

Table 7.1.5.6.2: Values of $k_{0,i}$ for different numbers of channelization codes and modulation schemes

Combination I	Modulation scheme	Number of channelization codes	$k_{0,i}$
0	QPSK	1	1
1		2	40
2		3	63
3		4	79
4		5	92
5		6	102
6		7	111
7		8	118
8		9	125
9		10	131
10		11	136
11		12	141
12		13	145
13		14	150
14		15	153
15	16QAM	1	40
16		2	79
17		3	102
18		4	118
19		5	131
20		6	141
21		7	150
22		8	157
23		9	164
24		10	169
25		11	175

26		12	180
27		13	184
28		14	188
29		15	192

Table 7.1.5.6.3: Mapping of HS-DSCH Transport Block Size for FDD to value of index k_t (=k_i + $k_{0,I}$)

Index	TB Size	Index	TB Size	Index	TB Size
1	137	86	1380	171	6324
2	149	87	1405	172	6438
3	161	88	1430	173	6554
4	173	89	1456	174	6673
5	185	90	1483	175	6793
6	197	91	1509	176	6916
7	209	92	1537	177	7041
8	221	93	1564	178	7168
9	233	94	1593	179	7298
10	245	95	1621	180	7430
11	257	96	1651	181	7564
12	269	97	1681	182	7700
13	281	98	1711	183	7840
14	293	99	1742	184	7981
15	305	100	1773	185	8125
16	317	101	1805	186	8272
17	329	102	1838	187	8422
18	341	103	1871	188	8574
19	353	104	1905	189	8729
20	365	105	1939	190	8886
21	377	106	1974	191	9047
22	389	107	2010	192	9210
23	401	108	2046	193	9377
24	413	109	2083	194	9546
25	425	110	2121	195	9719
26	437	111	2159	196	9894
27	449	112	2198	197	10073
28	461	113	2238	198	10255
29	473	114	2279	199	10440
30	485	115	2320	200	10629
31	497	116	2362	201	10821
32	509	117	2404	202	11017
33	521	118	2448	203	11216
34	533	119	2492	204	11418
35	545	120	2537	205	11625
36	557	121	2583	206	11835
37	569	122	2630	207	12048
38	581	123	2677	208	12266
39	593	124	2726	209	12488
40	605	125	2775	210	12713
41	616	126	2825	211	12943
42	627	127	2876	212	13177
43	639	128	2928	213	13415
44	650	129	2981	214	13657
45	662	130	3035	215	13904

46	674	131	3090	216	14155
47	686	132	3145	217	14411
48	699	133	3202	218	14671
49	711	134	3260	219	14936
50	724	135	3319	220	15206
51	737	136	3379	221	15481
52	751	137	3440	222	15761
53	764	138	3502	223	16045
54	778	139	3565	224	16335
55	792	140	3630	225	16630
56	806	141	3695	226	16931
57	821	142	3762	227	17237
58	836	143	3830	228	17548
59	851	144	3899	229	17865
60	866	145	3970	230	18188
61	882	146	4042	231	18517
62	898	147	4115	232	18851
63	914	148	4189	233	19192
64	931	149	4265	234	19538
65	947	150	4342	235	19891
66	964	151	4420	236	20251
67	982	152	4500	237	20617
68	1000	153	4581	238	20989
69	1018	154	4664	239	21368
70	1036	155	4748	240	21754
71	1055	156	4834	241	22147
72	1074	157	4921	242	22548
73	1093	158	5010	243	22955
74	1113	159	5101	244	23370
75	1133	160	5193	245	23792
76	1154	161	5287	246	24222
77	1175	162	5382	247	24659
78	1196	163	5480	248	25105
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80	1239	165	5680	250	26020
81	1262	166	5782	251	26490
82	1285	167	5887	252	26969
83	1308	168	5993	253	27456
84	1331	169	6101	254	27952
85	1356	170	6211		

Initial conditions

System Simulator:

1 cell, default parameters, Ciphering Off

User Equipment:

UE in idle mode

The following parameters are specific for this test case:

Common for all UE categories:

Parameter	Value
MAC-d PDU size	336 bits
MAC-hs receiver window size	16
Number of HARQ processes	1
Number of reordering queues	1

UE Category 1 to 4:

Parameter	Value
RLC Transmission window size	128
RLC Receiving window size	512

UE Category 5 and 6:

Parameter	Value
RLC Transmission window size	256
RLC Receiving window size	512

UE Category 7 and 8:

Parameter	Value
RLC Transmission window size	512
RLC Receiving window size	1536

UE Category 9 and 10:

Parameter	Value
RLC Transmission window size	512
RLC Receiving window size	2047

UE Category 11 and 12:

Parameter	Value
RLC Transmission window size	128
RLC Receiving window size	1024

Test procedure

a) The SS establishes the reference radio bearer configuration "Interactive or background / UL:64 DL: [max bit rate depending on UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH" as specified in TS 34.108, clause 6.10.2.4.5.1. See note 1.

b) The SS closes the test loop using UE test loop mode 1 setting the UL RLC SDU size parameter to 39 octets (312 bits).

c) The SS sets M= QPSK.

d) The SS sets N_{codes} = 1.

e) The SS sets $k_{0,i}$ to the value according to table 14.1.3.2.1 based on the actual value of M and N_{codes}.

f) The SS sets the test parameter k_i to 0.

g) The SS calculates the index value k_t (=k_i + $k_{0,I}$) and lockup the transport block size, TB_{size}, for the actual k_t in table 7.1.5.6.3

If TB_{size} is bigger than the UE capability for "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI" then SS continues with step d) else step h). See note 2.

h) The SS calculates the maximum number of MAC-d PDUs that fits into the MAC-hs transport block:

N_{PDUs} = floor((TB_{size} – *MAC-hs_header_size)* / *MAC-d_PDU_size)*

If N_{PDUs} is bigger than 70 then SS continues with step d) else i).

i) The SS creates a MAC-hs PDU of size TB_{size} containing N_{PDUs} MAC-d PDUs + padding. The payload data of the MAC-d PDUs contains 4 RLC SDUs of size N_{PDUs} * MAC-d PDU payload size / 4 minus 8 bits (size of 7 bit length indicator and expansion bit). See note 3.

j) The SS transmits the MAC-hs PDU.

k) The SS checks that the UE returned RLC SDUs has the same content as the first 312 bits of the test data sent by the SS in downlink.

l) The SS increments the test parameter k_j by 1. If k_j is less than 63 then SS repeats steps g) to l).

m) The SS increments the test parameter *N_Code by 1*. If *N_code* is less or equal to the UE capability for *"Maximum number of HS-DSCH codes received"* then the SS repeats test steps e) to m) else continue with step n). See note 2.

n) If *Modulation* = QPSK and UE capability for *"Supported modulation"* is 16QAM then the SS sets the test parameter *Modulation* to 16QAM and repeats steps d) to n) else continue with step o). See note 2.

o) The SS opens the UE test loop.

p) The SS release the radio bearer.

q) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The SS configures the physical channel parameters according to the actual UE category under test.

NOTE 2: See table Table 14.1.3.1.1 in section 14.1.3.1 for FDD HS-DSCH physical layer and RLC and MAC-hs capability parameters and there values for different UE FDD HS-DSCH physical layer categories (UE categories). The capability parameters having impact on the test procedure are: "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI", *"Maximum number of HS-DSCH codes received" and "Supported modulation"*

NOTE 3: The test data for transport channels on HS-DSCH is divided into 4 RLC SDUs to keep the SDU size not to exceed 1500 octets (limit of SDU size in SM).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		SERVICE REQUEST (DCCH)	GMM
7	<--		SECURITY MODE COMMAND	RRC see note 1
8	-->		SECURITY MODE COMPLETE	RRC see note 1
9	<--		ACTIVATE RB TEST MODE (DCCH)	TC
10	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
11	<--		RADIO BEARER SETUP (DCCH)	RRC. For the PS radio bearer the 'pdcp info' IE shall be omitted.
12	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
13	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is set to 39 octets
14	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
15	SS			The SS calculates test data for the first TFRC (TFRI,N_{codes} and *M*).
16	<--		DOWNLINK MAC-hs PDU (4 x RLC SDU)	Send test data. The MAC-hs PDU contains 4 RLC SDUs
17	-->		UPLINK RLC SDUs	The SS checks that the content of the received UL RLC SDUs are correct
18	SS			The SS calculates test data for next TFRC and repeat steps 16 to 18 until all TFRCs have been tested.
19	<--		OPEN UE TEST LOOP (DCCH)	TC
20	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
21			RB RELEASE	RRC
22	<--		DEACTIVATE RB TEST MODE	TC Optional step
23	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step
Note 1 In addition to activate integrity protection Step 6 and Step 7 are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.				

7.1.5.6.5 Test requirements

For each TFRC the UE shall return a UL RLC SDUs with the same content as the first 312 bits of the test data sent by the SS in downlink.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050475

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1137 ⌘ **rev** **-** ⌘ Current version: **5.10.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Addition of details to HSDPA radio bearer test case 14.6.3a (new), 14.6.4, 14.6.4a (new), 14.6.5 and 14.6.5a (new)
Source:	⌘	Ericsson
Work item code:	⌘	TEI
Date:	⌘	8/02/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	1. Details missing for to HSDPA radio bearer test case 14.6.4 and 14.6.5 2. New HSDPA radio bearer test case 14.6.3a, 14.6.4a and 14.6.5a introduced
Summary of change:	⌘	1. Details added for test cases 14.6.4 and 14.6.5 2. New HSDPA radio bearer test case 14.6.3a, 14.6.4a and 14.6.5a added
Consequences if not approved:	⌘	Specification of test cases for HSDPA radio bearer combinations not complete.

Clauses affected:	⌘	14.6.3a (new), 14.6.4, 14.6.4a (new), 14.6.5 and 14.6.5a (new)

Other specs Affected:	⌘	Y	N		⌘
			X	Other core specifications	34.123-2 (T1-050474)
		X		Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

14.6.3a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL: 64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.3a.1 Conformance requirement

See 14.6.1.1.

14.6.3a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.3a for the uplink 64 kbps case.

14.6.3a.3 Method of test

The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	16
RLC Transmission window size	See sub-test table
RLC Receiving window size	See sub-test table

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	3x336	N/A
	TF4, bits	N/A	N/A	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1, TF0)
UL_TFC4	(TF1, TF0, TF0, TF1, TF0)
UL_TFC5	(TF2, TF1, TF1, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF2, TF0)
UL_TFC7	(TF1, TF0, TF0, TF2, TF0)
UL_TFC8	(TF2, TF1, TF1, TF2, TF0)
UL_TFC9	(TF0, TF0, TF0, TF3, TF0)
UL_TFC10	(TF1, TF0, TF0, TF3, TF0)
UL_TFC11	(TF2, TF1, TF1, TF3, TF0)
UL_TFC12	(TF0, TF0, TF0, TF4, TF0)
UL_TFC13	(TF1, TF0, TF0, TF4, TF0)
UL_TFC14	(TF2, TF1, TF1, TF4, TF0)
UL_TFC15	(TF0, TF0, TF0, TF0, TF1)
UL_TFC16	(TF1, TF0, TF0, TF0, TF1)
UL_TFC17	(TF2, TF1, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF1, TF1, TF1)
UL_TFC21	(TF0, TF0, TF0, TF2, TF1)
UL_TFC22	(TF1, TF0, TF0, TF2, TF1)
UL_TFC23	(TF2, TF1, TF1, TF2, TF1)
UL_TFC24	(TF0, TF0, TF0, TF3, TF1)
UL_TFC25	(TF1, TF0, TF0, TF3, TF1)
UL_TFC26	(TF2, TF1, TF1, TF3, TF1)
UL_TFC27	(TF0, TF0, TF0, TF4, TF1)
UL_TFC28	(TF1, TF0, TF0, TF4, TF1)
UL_TFC29	(TF2, TF1, TF1, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Speech and Interactive Background radio bearer. As the Interactive Background UL:64 kbps radio bearer (RB8) has the highest number of transport formats (4 excluding TF0) then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB8 and for the different speech transport formats are: UL_TFC4 for TF1, UL_TFC8 for TF2, UL_TFC11 for TF3 and UL_TFC13 for TF4.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC15, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC2	UL_TFC8	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC8, UL_TFC15, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	DL_TFC2	UL_TFC11	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC11, UL_TFC15, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	DL_TFC1	UL_TFC13	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC13, UL_TFC15, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB8: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB8 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.3a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
   - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 952 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB8 having the same content as the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.

14.6.4 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.4.1 Conformance requirement

See 14.6.1.1.

14.6.4.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.4.

14.6.4.3 Method of test

~~FFS~~ Initial Conditions

The following RLC Info parameter values shall be set by the SS for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB (RB5):

	RB5 (Conv. 64 kbps)
Uplink RLC	
TM RLC	
Segmentation indication	FALSE
Transmission RLC discard	
CHOICE *SDU Discard Mode*	
Timer based no explicit	
Timer_discard	100ms
Downlink RLC	
TM RLC	
Segmentation indication	FALSE
NOTE: Timer based discard without explicit signalling is used in uplink to secure that the UE will be able to return data for the case when the UE test loop function will not deliver all the SDUs in one and the same TTI .	

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 384 kbps, 10 ms TTI)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	4x336	N/A
	TF4, bits	N/A	8x336	N/A
	TF5, bits	N/A	12x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0,TF0,TF0)
UL_TFC1	(TF1,TF0,TF0)
UL_TFC2	(TF0,TF1,TF0)
UL_TFC3	(TF1,TF1,TF0)
UL_TFC4	(TF0,TF2,TF0)
UL_TFC5	(TF1,TF2,TF0)
UL_TFC6	(TF0,TF3,TF0)
UL_TFC7	(TF1,TF3,TF0)
UL_TFC8	(TF0,TF4,TF0)
UL_TFC9	(TF1,TF4,TF0)
UL_TFC10	(TF0,TF5,TF0)
UL_TFC11	(TF1,TF5,TF0)
UL_TFC12	(TF0,TF0,TF1)
UL_TFC13	(TF1,TF0,TF1)
UL_TFC14	(TF0,TF1,TF1)
UL_TFC15	(TF1,TF1,TF1)
UL_TFC16	(TF0,TF2,TF1)
UL_TFC17	(TF1,TF2,TF1)
UL_TFC18	(TF0,TF3,TF1)
UL_TFC19	(TF1,TF3,TF1)
UL_TFC20	(TF0,TF4,TF1)
UL_TFC21	(TF1,TF4,TF1)
UL_TFC22	(TF0,TF5,TF1)
UL_TFC23	(TF1,TF5,TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	4x640	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Conversational CS and Interactive Background PS radio bearer. As the Interactive Background UL:384 kbps radio bearer (RB6) has the highest number of transport formats (5 for TTI=10 ms and excluding TF0) then 5 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB6 and for TF1 for RB5 are: UL_TFC3 for TF1, UL_TFC5 for TF2, UL_TFC7 for TF3, UL_TFC9 for TF4 and UL_TFC11 for TF5.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15	RB5: 640 RB6: 312	RB5: 4x640 RB6: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC1	UL_TFC5	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC12, UL_TFC17	RB5: 640 RB6: 632	RB5: 4x640 RB6: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	DL_TFC1	UL_TFC7	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC7, UL_TFC12, UL_TFC19	RB5: 640 RB6: 1272	RB5: 4x640 RB6: See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	DL_TFC1	UL_TFC9	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC9, UL_TFC12, UL_TFC21	RB5: 640 RB6: 2552	RB5: 4x640 RB6: See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							
5	1	8	256	256	656	DL_TFC1	UL_TFC11	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC11,	RB5: 640 RB6: 3832	RB5: 4x640 RB6: See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							

	5	8	256	256					UL_TFC12, UL_TFC23		
	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, and UL_TFC12 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.4.4 Test requirements

~~FFS~~ See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 312 bits of the test data sent by the SS in downlink.
   - for sub-test 2: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 1272 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 2552 bits of the test data sent by the SS in downlink.
   - for sub-test 5: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 3832 bits of the test data sent by the SS in downlink.

14.6.4a Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.4a.1 Conformance requirement

See 14.6.1.1.

14.6.4a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.4a.

14.6.4a.3 Method of test

Initial Conditions

The following RLC Info parameter values shall be set by the SS for the Conversational / unknown / UL:64 DL:64 kbps / CS RAB (RB5):

	RB5 (Conv. 64 kbps)
Uplink RLC	
TM RLC	
Segmentation indication	FALSE
Transmission RLC discard	
CHOICE *SDU Discard Mode*	
Timer based no explicit	
Timer_discard	100ms
Downlink RLC	
TM RLC	
Segmentation indication	FALSE
NOTE: Timer based discard without explicit signalling is used in uplink to secure that the UE will be able to return data for the case when the UE test loop function will not deliver all the SDUs in one and the same TTI .	

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	4x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	3x336	N/A
	TF4, bits	N/A	4x336	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF0, TF1, TF0)
UL_TFC3	(TF1, TF1, TF0)
UL_TFC4	(TF0, TF2, TF0)
UL_TFC5	(TF1, TF2, TF0)
UL_TFC6	(TF0, TF3, TF0)
UL_TFC7	(TF1, TF3, TF0)
UL_TFC8	(TF0, TF4, TF0)
UL_TFC9	(TF1, TF4, TF0)
UL_TFC10	(TF0, TF0, TF1)
UL_TFC11	(TF1, TF0, TF1)
UL_TFC12	(TF0, TF1, TF1)
UL_TFC13	(TF1, TF1, TF1)
UL_TFC14	(TF0, TF2, TF1)
UL_TFC15	(TF1, TF2, TF1)
UL_TFC16	(TF0, TF3, TF1)
UL_TFC17	(TF1, TF3, TF1)
UL_TFC18	(TF0, TF4, TF1)
UL_TFC19	(TF1, TF4, TF1)

Downlink TFS:

	TFI	RB5 (Conv. 64 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	4x640	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the Conversational CS and Interactive Background PS radio bearer. As the Interactive Background UL:64 kbps radio bearer (RB6) has the highest number of transport formats (4 excluding TF0) then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB6 and for TF1 for RB5 are: UL_TFC3 for TF1, UL_TFC5 for TF2, UL_TFC7 for TF3 and UL_TFC9 for TF4.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 640 RB6: 312	RB5: 4x640 RB6: See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	DL_TFC1	UL_TFC5	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 640 RB6: 632	RB5: 4x640 RB6: See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	DL_TFC1	UL_TFC7	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 640 RB6: 952	RB5: 4x640 RB6: See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	DL_TFC1	UL_TFC9	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 640 RB6: 1272	RB5: 4x640 RB6: See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1, UL_TFC2, and UL_TFC10 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.4a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 312 bits of the test data sent by the SS in downlink.
   - for sub-test 2: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 952 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 having the same content as sent by the SS in downlink; and RLC SDUs on RB6 having the same content as the first 1272 bits of the test data sent by the SS in downlink.

14.6.5 Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + Interactive or background / UL:384 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.54.1 Conformance requirement

See 14.6.1.1.

14.6.54.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.5.

14.6.54.3 Method of test

~~FFS~~ The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB6 (I/B 384 kbps)	RB6 (I/B 384 kbps)	DCCH
TFS	TF0, bits	0x336	0x336	0x148
	TF1, bits	1x336	1x336	1x148
	TF2, bits	2x336	2x336	N/A
	TF3, bits	4x336	4x336	N/A
	TF4, bits	8x336	8x336	N/A
	TF5, bits	12x336	12x336	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the 2 x Interactive Background PS radio bearer. As the 2 x Interactive Background UL:384 kbps radio bearer (RB5+RB6) have 5 transport formats then 5 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF5 for RB5+RB6 are: UL_TFC1 for TF1, UL_TFC2 for TF2, UL_TFC3 for TF3, UL_TFC4 for TF4 and UL_TFC5 for TF5.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	N/A	UL_TFC1	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 312 RB6: 312	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	N/A	UL_TFC2	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	N/A	UL_TFC3	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1272 RB6: 1272	See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	N/A	UL_TFC4	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 2532 RB6: 2552	See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							
5	1	8	256	256	656	N/A	UL_TFC5	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 3832 RB6: 3832	See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							

	6	8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC6 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5 and RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.54.4 Test requirements

~~FFS~~ See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 and RB6 having the same content as the first 312 bits of the test data sent by the SS in downlink.
   - for sub-test 2: RLC SDUs on RB5 and RB6 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5 and RB6 having the same content as the first 1272 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 and RB6 having the same content as the first 2552 bits of the test data sent by the SS in downlink.
   - for sub-test 5: RLC SDUs on RB5 and RB6 having the same content as the first 3832 bits of the test data sent by the SS in downlink.

14.6.5a Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + Interactive or background / UL:64 DL:[Bit rate depending on the UE category] / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.6.5a.1 Conformance requirement

See 14.6.1.1.

14.6.5a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.5.5a.

14.6.5a.3 Method of test

The generic test procedure in 14.1.3.5 is run for each sub-test.

Uplink TFS:

	TFI	RB5 + RB6 (64 kbps RAB, 20 ms TTI)	DCCH
TFS	TF0, bits	0x340	0x148
	TF1, bits	1x340	1x148
	TF2, bits	2x340	N/A
	TF3, bits	3x340	N/A
	TF4, bits	4x340	N/A

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Sub-tests:

The principle used to select sub-tests has been to cover all uplink and downlink TFS for the 2 x Interactive Background PS radio bearer. As the 2 x Interactive Background UL:64 kbps radio bearer (RB5+RB6) has 4 transport formats then 4 sub-tests have been defined. The selected UL TFCI to achieve test coverage of TF1 to TF4 for RB5+RB6 are: UL_TFC1 for TF1, UL_TFC2 for TF2, UL_TFC3 for TF3 and UL_TFC4 for TF4.

Sub-test	UE Category	Num-ber of HARQ processes	RLC Receiving window size (note 1)	RLC Trans-mission window size (note 1)	MAC-d PDU size (bits)	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)	Test data size (bits) (note 4)
1	1	2	512	256	336	N/A	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312 RB6: 312	See note 4
	2	2	512	256							
	3	3	512	256							
	4	3	512	256							
	5	6	512	256							
	6	6	512	256							
	7	6	1536	512							
	8	6	1536	512							
	9	6	2047	512							
	10	6	2047	512							
	11	3	512	256							
	12	6	512	256							
2	1	2	256	256	656	N/A	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632 RB6: 632	See note 4
	2	2	256	256							
	3	3	256	256							
	4	3	256	256							
	5	6	256	256							
	6	6	256	256							
	7	6	512	512							
	8	6	512	512							
	9	6	1024	512							
	10	6	1024	1024							
	11	3	256	256							
	12	6	256	256							
3	1	8	512	256	336	N/A	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952 RB6: 952	See note 4
	2	8	512	256							
	3	8	512	256							
	4	8	512	256							
	5	8	512	256							
	6	8	512	256							
	7	8	1536	512							
	8	8	1536	512							
	9	8	2047	512							
	10	8	2047	1024							
	11	8	512	256							
	12	8	512	256							
4	1	8	256	256	656	N/A	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272 RB6: 1272	See note 4
	2	8	256	256							
	3	8	256	256							
	4	8	256	256							
	5	8	256	256							
		8	256	256							
	7	8	512	512							
	8	8	512	512							
	9	8	1024	512							
	10	8	1024	1024							
	11	8	256	256							
	12	8	256	256							

NOTE 1: The SS shall configure the RLC transmission and receiver window size depending on the UE category. The values are set to cope with the number of SDUs used in the sub-test and within the UE capabilities for the actual UE category under test.
NOTE 2: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.
NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5 and RB6: The UL RLC SDU size is set to N*UL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit) , where N is the number of transport blocks for the UL transport format under test. This will make the UE to return one RLC SDU per UL TTI.
NOTE 4: The test data size for RB5 and RB6 is dependent on the actual TFRC test point, see the generic test procedure in 14.1.3.5.

14.6.5a.4 Test requirements

See 14.1.3.5 for definition of the referenced step numbers.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At steps 17 to 20 the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 18 the UE shall return
   - for sub-test 1: RLC SDUs on RB5 and RB6 having the same content as the first 312 bits of the test data sent by the SS in downlink.
   - for sub-test 2: RLC SDUs on RB5 and RB6 having the same content as the first 632 bits of the test data sent by the SS in downlink.
   - for sub-test 3: RLC SDUs on RB5 and RB6 having the same content as the first 952 bits of the test data sent by the SS in downlink;
   - for sub-test 4: RLC SDUs on RB5 and RB6 having the same content as the first 1272 bits of the test data sent by the SS in downlink.

3GPP TSG-T1 Meeting #26
Bangalore, India, 31st January – 4th February 2005

Tdoc ⌘T1-050466

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1** **CR** 1133 ⌘ **rev** **-** ⌘ Current version: **5.a.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: | UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Corrections to HSDPA RRC test case 8.2.2.40 (revision of T1-050271)
Source:	⌘	Nokia, ETSI MCC160
Work item code:	⌘	TEI
Date:	⌘	10/01/2005
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	• Step 0 of the prose set up a PS RB mapped on HS-DSCH using only one RB Multiplexing Option (DCH/HS-DSCH). Then at step 1 HS-DSCH reception is stopped, which means the radio bearer is not mapped to any DL transport channel any more. • At step 4 of the prose the value for the IE 'DL Scrambling Code' is missing. • For the Radio Bearer mapped on top of HS-DSCH the default RB Identity is now 25 (see T1-050072). • The IE 'RB Information Reconfiguration' contain extra parameters on the r5 branch of the Radio Bearer Reconfiguration message (with regards to the r3 branch). These new IE's must be defined in the prose.
Summary of change:	⌘	• At step 2 of the prose map the PS RB on top of RACH/FACH. At step 4 of the prose change the RB mapping of the PS RB back to DCH/HS-DSCH and add the DL TrCH HS-DSCH. • At step 4 set the IE 'DL Scrambling Code' to 'Not Present'. • Change the RB Id from 23 into 25. • At steps 2 & 4 include the IE's 'Downlink RLC PDU Size' & 'One sided RLC re-establishment' where mandatory.
Consequences if not approved:	⌘	The test case will fail a conformant UE.

Clauses affected:	⌘	8.2.2.40

Other specs affected:	⌘	Y	N		
			X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.2.40 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_FACH and from CELL_FACH to CELL_DCH: Success (frequency band modification, start and stop of HS-DSCH reception)

8.2.2.40.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.2.40.2 Conformance requirement

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if "DPCH frame offset" is included for one or more RLs in the active set:

2> use its value to determine the beginning of the DPCH frame in accordance with the following:

3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:

4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).

3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:

4> set the variable INVALID_CONFIGURATION to TRUE.

3> and the procedure ends.

2> adjust the radio link timing accordingly.

…

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

…

The variable HS_DSCH_RECEPTION shall be set to "TRUE" only when all the following conditions are met:

1> the UE is in CELL_DCH state;

1> the variable H_RNTI is set;

1> the UE has a stored IE "HS-SCCH info";

1> for FDD:

2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;

2> the UE has stored the following IEs:

- IE "Measurement Feedback Info";

- IE "Uplink DPCH Power Control Info" including stored $\Delta_{ACK,}$ Δ_{NACK} and Ack-NACK Repetition factor;
- IE "HARQ info".

1> there is at least one RB mapped to HS-DSCH;

1> at least for one of the RB's mapped to HS-DSCH, there is at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow;

NOTE: To enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the serving HS-DSCH radio link.

If any of the above conditions is not met and the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> set the variable HS_DSCH_RECEPTION to FALSE;

1> stop any HS_SCCH reception procedures;

1> stop any HS-DSCH reception procedures;

1> clear the variable H_RNTI and remove any stored H-RNTI;

1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;

1> release all HARQ resources;

1> no long consider any radio link to be the HS-DSCH serving radio link.

NOTE: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS_DSCH_RECEPTION is set to TRUE, the UE shall:

1> perform HS_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:

2> subclause 8.6.6.33 for the IE "HS-SCCH Info".

1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:

2> subclause 8.6.3.1b for the IE "H-RNTI";

2> subclause 8.6.5.6b for the IE "HARQ info";

2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".

Whenever the variable HS_DSCH_RECEPTION is set to FALSE, the UE shall:

1> not perform HS_SCCH reception procedures;

1> not perform HS-DSCH reception procedures.

…

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

1> at the activation time T:

2> for an HS-DSCH related reconfiguration caused by the received message:

3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;

3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.

2> for actions, other than a physical channel reconfiguration, caused by the received message:

3> perform the actions for the information elements in the received message as specified elsewhere.

NOTE: An "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.5.25, 8.6.3.1

8.2.2.40.3 Test purpose

To confirm that the UE transits to CELL_FACH state from CELL_DCH state in another cell and frequency and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

To confirm that the UE transits to CELL_DCH state from CELL_FACH state in another cell and frequency and starts receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message.

8.2.2.40.4 Method of test

Initial Condition

System Simulator: 2 cells–Cells 1 and 6 are active.

UE: PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement(s)

- UE supports FDD
- UE supports HS-PDSCH

Test Procedure

Table 8.2.2.40

Parameter	**Unit**	**Cell 1**		**Cell 6**	
		T0	T1	T0	T1
UTRA RF Channel Number		f_1		f_2	
CPICH Ec	dBm/ 3.84 MHz	-60	-65	Off	-60

Table 8.2.2.40 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

SS initiates P25 to make the UE move to state 6-17 as specified in TS34.108 clause7.4. The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1. The SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.2.40.

The SS then applies the power levels according to “T1” in table 8.2.2.40 and transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it stops HS-DSCH reception, moves to CELL_FACH state in cell 6 and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Then, SS transmits a RADIO BEARER RECONFIGURATION message to the UE. After the UE receives this message, it moves to CELL_DCH state in cell 1, resumes HS-DSCH reception and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

NOTE: If the UE fails the test because of a failure to reselect to a right cell, then the operator may re-run the test.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0	←→		P25	See below for the specific message content used in RADIO BEARER SETUP message (Step 0)
1	SS			The SS applies the power settings according to “T1” in table 8.2.2.40.
2	←		RADIO BEARER RECONFIGURATION	Stop of HS-DSCH reception and transit to CELL_FACH state in cell 6,
3	→		RADIO BEARER RECONFIGURATION COMPLETE	
4	←		RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception and transit to CELL_DCH state in cell 1
5	→		RADIO BEARER RECONFIGURATION COMPLETE	
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 0)

Use the same message as specified for " Packet to CELL_DCH / HS-DSCH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
RAB information for setup	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.
Added or Reconfigured DL TrCH information	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message as specified for "Packet to CELL_FACH from CELL_DCH in PS" in 34.108, except for the following:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present

- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(High-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	600
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	250
- Timer_poll	250
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	~~Not Present~~
- Information for each multiplexing option	1 RBMuxOption
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1

- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	7
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	8
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	7
- RB stop/continue	Not Present
Deleted DL TrCH information	
- Downlink transport channel type	HS-DSCH
- DL HS-DSCH MAC-d flow identity	0
Frequency info	Set to the frequency of cell 6
Maximum allowed UL TX power	Not Present
Downlink information per radio link list	
-Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	Set to same code as used for cell 6

RADIO BEARER RECONFIGURATION (Step 4)

Use the same message as specified for "Packet to CELL_DCH from CELL_FACH in PS" in 34.108 except for the following:

Information Element	Value/remark
New H-RNTI	'0101 0101 0101 0101'
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present

- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	400
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	150
- Timer_poll	150
- Poll_PDU	Not present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Window	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(high-speed AM DTCH)
- RB identity	~~23~~25
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- CHOICE SDU discard mode	No Discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	500
- Max_RST	4
- Polling info	
- Timer_poll_prohibit	100
- Timer_poll	100
- Poll_PDU	Not Present
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- CHOICE Downlink RLC PDU Size	Reference to TS34.108 clause 6 Parameter Set
- In-sequence delivery	TRUE
- Receiving window size	768
- Downlink RLC status info	
- Timer_status_prohibit	100
- Timer_EPC	Not Present
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- One sided RLC re-establishment	FALSE
- RB mapping info	~~Not Present~~Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.

- RB stop/continue	Not Present
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
DL Transport channel information common for all transport channel	Not Present
Added or Reconfigured DL TrCH information	~~Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A10.~~
- Downlink transport channel type	HS-DSCH
- DL Transport channel identity	Not Present
- CHOICE DL parameters	HS-DSCH
- HARQ Info	
- Number of Processes	6
- CHOICE *Memory Partitioning*	Implicit
- Added or reconfigured MAC-d flow	
- MAC-hs queue to add or reconfigure list	(one queue)
- MAC-hs queue Id	0
- MAC-d Flow Identity	0
- T1	50
- MAC-hs window size	16
- MAC-d PDU size Info	
- MAC-d PDU size	336
- MAC-d PDU size index	0
- MAC-hs queue to delete list	Not present
- DCH quality target	Not present
Frequency info	Set to the frequency of cell 1
Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	Not Present
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	1
- Measurement Feedback Info	
- CHOICE mode	FDD
- POhsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	-3 dB
- CHOICE mode	FDD (no data)
CHOICE channel requirement	Uplink DPCH info
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Δ_{ACK}	3
- Δ_{NACK}	3
- Ack-Nack repetition factor	1
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present(1)
- spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- Number of FBI bit	Reference to TS34.108 clause 6.10 Parameter Set
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indicator	Initialise
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset PPilot-DPDCH	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Reference to TS34.108 clause 6.10 Parameter Set

- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE mode	FDD
- DPCH compressed mode info	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	Not Present
- MAC-hs reset indicator	TRUE
Downlink information for each radio link list	
- Downlink information for each radio link	
- Choice mode	FDD
- Primary CPICH info	
- Primary scrambling code	Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Serving HS-DSCH radio link indicator	TRUE
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	1
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	0
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

8.2.2.40.5 Test requirements

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 6.

After step 4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the uplink DCCH in cell 1.