

Source: T1
Title: CR's to TS 34.123-1 v.5.7.0 and v.5.7.1 for approval
Agenda item: 5.1.3
Document for: Approval

This document contains the CRs to TS 34.123-1 v.5.7.0 and v.5.7.1. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Tdoc #	Title	CR#	Release	cat	Version in	Version out
T1-040509	CR to TS 34.123-1 R5; Correction to low priority RRC TCs 8.1.8.3 and 8.2.1.13.	753	Rel-5	F	5.7.0	5.8.0
T1-040513	CR to TS 34.123-1 R5; Correction to low priority RRC TCs TC 8.1.6.4, 8.1.9a and 8.1.9b.	754	Rel-5	F	5.7.0	5.8.0
T1-040519	Correction to HSDPA MAC-hs test cases	755	REL-5	F	5.7.1	5.8.0
T1-040520	New HSDPA MAC-hs reset test case	756	REL-5	F	5.7.1	5.8.0
T1-040521	Correction to HSDPA radio bearer test cases	758	REL-5	F	5.7.1	5.8.0
T1-040527	Correction to low priority GMM TC 12.4.1.5	759	Rel-5	F	5.7.1	5.8.0
T1-040528	Correction to P4 GMM TCs 12.2.1.5d and 12.4.1.4d	760	Rel-5	F	5.7.1	5.8.0
T1-040529	Correction to several GMM TCs to include equivalent PLMN IE	855	Rel-5	F	5.7.1	5.8.0
T1-040549	Correction to package 1 MAC testcase 7.1.2.3.1	761	Rel-5	F	5.7.1	5.8.0
T1-040552	Correction to package 2 MM testcase 9.4.2.1 to align with TTCN implementation.	762	Rel-5	F	5.7.1	5.8.0
T1-040553	Correction to package 2 MM testcase 9.4.4	763	Rel-5	D	5.7.1	5.8.0
T1-040557	'Emergency call establishment' as one of the CM Service Type in 10.1.2.1.1	764	Rel-5	F	5.7.1	5.8.0

T1-040558	Correction to package 1 test case 8.1.2.9 for BCCH Modification Time in Paging Type 1 message	765	Rel-5	F	5.7.1	5.8.0
T1-040559	Correction for RRC Transaction Identifier in test cases 8.1.5.1 and 8.1.5.4	766	Rel-5	F	5.7.1	5.8.0
T1-040560	Editorial corrections for 8.3.1.1	767	Rel-5	D	5.7.1	5.8.0
T1-040561	Corrections to prose for test cases 8.1.1.4, 8.1.1.5 and 8.1.1.6	768	Rel-5	F	5.7.1	5.8.0
T1-040565	Editorial correction for 14.2.11, 14.2.39.2	769	Rel-5	D	5.7.1	5.8.0
T1-040566	Future compatibility of RRC critical extension testing	770	Rel-5	F	5.7.1	5.8.0
T1-040567	Editorial correction for 8.3.1.31	771	Rel-5	D	5.7.1	5.8.0
T1-040568	Corrections in Specific Message Contents for clause 8.3.1.5.4 and 8.3.1.6.4	772	Rel-5	F	5.7.1	5.8.0
T1-040570	Addition of test case for Interactive or background / UL:64 DL:768 kbps / 10 ms TTI	773	Rel-5	F	5.7.1	5.8.0
T1-040575	CR to 34.123-1 REL-5; Correction to package 4 RRC test case 8.2.2.35	774	Rel-5	F	5.7.1	5.8.0
T1-040576	CR to 34.123-1 REL-5; Correction to package 4 RRC test case 8.2.3.29	775	Rel-5	F	5.7.1	5.8.0
T1-040577	CR to 34.123-1 REL-5; Correction to package 2 RRC test case 8.3.1.22	776	Rel-5	F	5.7.1	5.8.0
T1-040581	Correction to package 1 RRC test case 8.2.4.1a	777	REL-5	F	5.7.1	5.8.0
T1-040585	Correction to initial conditions of Idle Mode test case 6.2.1.6	778	REL-5	F	5.7.1	5.8.0
T1-040589	Changes to test procedure of Cell Reselection Case 8.3.9.3	779	REL-5	F	5.7.1	5.8.0
T1-040625	Correction to number of reported cells in RRC P2 test case 8.4.1.7	781	Rel-5	F	5.7.0	5.8.0
T1-040626	Correction to Low Priority RRC Cell Change Order Test Cases	782	Rel-5	F	5.7.0	5.8.0
T1-040627	Removal of 8.2.1.26 (P4)	783	Rel-5	F	5.7.1	5.8.0
T1-040628	Correction to P4 RRC Cell Change Order Test Cases	784	Rel-5	F	5.7.0	5.8.0
T1-040629	Correction to P3 HCS test case 8.3.2.13	785	Rel-5	F	5.7.0	5.8.0

T1-040630	Correction to P2 RRC test case 8.2.4.4	786	Rel-5	F	5.7.0	5.8.0
T1-040631	Corrections to P4 RRC UTRAN to GERAN Cell Reselection test cases	787	Rel-5	F	5.7.0	5.8.0
T1-040632	Correction to Low Priority RRC Cell Reselection test cases	788	Rel-5	F	5.7.0	5.8.0
T1-040633	Corrections to P2 RRC test case 8.3.2.4	789	Rel-5	F	5.7.0	5.8.0
T1-040634	Corrections to P2 RRC test case 8.3.2.1	790	Rel-5	F	5.7.0	5.8.0
T1-040635	Correction to P2 test case 8.4.1.18	791	Rel-5	F	5.7.0	5.8.0
T1-040637	Correction to P3 Inter Rat Measurement test cases	792	Rel-5	F	5.7.0	5.8.0
T1-040639	Errors correction in section 8.4.1.7A for TDD of TS34.123-1	793	Rel-5	F	5.7.1	5.8.0
T1-040640	Errors correction in section 8.4.1.29 of TS34.123-1	794	Rel-5	F	5.7.1	5.8.0
T1-040641	To add the description of "Primary CCPCH info" (for TDD) in 8.1.6.3.	795	Rel-5	F	5.7.1	5.8.0
T1-040642	To add the description of "Primary CCPCH info" (for TDD) in 8.2.6.8.	796	Rel-5	F	5.7.1	5.8.0
T1-040644	Errors correction in section 8.3.1.4.4 of TS34.123-1	797	Rel-5	F	5.7.1	5.8.0
T1-040645	Errors correction in section 8.4.1.2a of TS34.123-1	798	Rel-5	F	5.7.1	5.8.0
T1-040646	Corrections to test case 8.2.1.27 (Low priority)	799	Rel-5	F	5.7.1	5.8.0
T1-040647	General corrections to section 6 of 34.123-1 (idle mode)	800	REL-5	F	5.7.1	5.8.0
T1-040648	Corrections in Security Mode Command for 8.1.7.1 and 8.1.7.2 test cases.	801	Rel-5	F	5.7.1	5.8.0
T1-040651	CR to TS 34.123-1 R5; Correction to P1 RRC TC 8.4.1.1.	802	Rel-5	F	5.7.1	5.8.0
T1-040658	Add HCR TDD content of Inter-frequency measurement for event 2A	803	Rel-5	F	5.7.1	5.8.0
T1-040659	Add HCR TDD content of Inter-frequency measurement for event 2B and 2E	804	Rel-5	F	5.7.1	5.8.0
T1-040661	Add HCR TDD content for UE internal measurement, event 6c	805	Rel-5	F	5.7.1	5.8.0

T1-040662	Add HCR TDD content for UE internal measurement, event 6d	806	Rel-5	F	5.7.1	5.8.0
T1-040663	Add HCR TDD content for UE internal measurement, event 6e	807	Rel-5	F	5.7.1	5.8.0
T1-040664	Adding of new test cases for events 1G for HCR TDD	808	Rel-5	B	5.7.1	5.8.0
T1-040666	Tests for HCR TDD RAB combinations	809	Rel-4 and Rel-5	F	5.7.1	5.8.0
T1-040668	Corrections to specific message contents of test case 8.1.2.9 to support CS Domain.	811	Rel-5	F	5.7.1	5.8.0
T1-040671	Correction to Conformance Requirement for P3 CC NAS TCs regarding support for "Prolonged Clearing Procedure".	810	Rel-5	F	5.7.1	5.8.0
T1-040674	Correction to RRC Package 2 TC 8.4.1.17 on Measurement Reporting Interval.	812	Rel-5	F	5.7.1	5.8.0
T1-040678	Correction to 8.3.4.2 test case at Step 6 for Measurement Report Message	813	Rel-5	F	5.7.1	5.8.0
T1-040680	Correction for RRC Transaction Identifier in test cases 8.1.6.1 and 8.1.6.2	814	Rel-5	F	5.7.1	5.8.0
T1-040681	Correction to New C-RNTI value at Step5 in 8.3.1.11 testcase.	815	Rel-5	F	5.7.1	5.8.0
T1-040682	Correction to prose for test case 7.1.1.1	816	Rel-5	D	5.7.1	5.8.0
T1-040710	Editorial correction to 8.2.3.22 (Low Priority)	817	Rel-5	F	5.7.1	5.8.0
T1-040715	Addition of new SRNS relocation (radio link failure) test cases	757	Rel-5	F	5.7.1	5.8.0
T1-040724	CR 34.123-1 Rel-5: Corrections to MM test cases to emergency call support and authentication procedures.	818	Rel-5	F	5.7.1	5.8.0
T1-040731	CR to 34.123-1 Rel-5: Correction to package 3 RRC test case 8.4.1.26	819	Rel-5	F	5.7.1	5.8.0
T1-040732	CR to 34.123-1 Rel-5: Correction to package 3 RRC test case 8.2.4.1a	820	Rel-5	F	5.7.1	5.8.0
T1-040758	Correction to low priority TC 8.3.11.3	853	Rel-5	F	5.7.1	5.8.0
T1-040919	Corrections to TC 8.3.1.30 (Low Priority)	822	Rel-5	F	5.7.1	5.8.0

T1-040921	Correction of Test Requirement in Package 2 test case 9.3.1	821	Rel-5	F	5.7.1	5.8.0
T1-040937	Changes to test procedure of Idle Mode Cell Reselection test case 6.2.2.3 (Revision of T1-040587)	823	REL-5	F	5.7.1	5.8.0
T1-040938	Re-instatement of Test Requirements to meet the Test Purpose in 7.2.3.24 and 7.2.3.27 (Merged with T1-040550 and revised from T1-040918)	824	Rel-5	F	5.7.1	5.8.0
T1-040941	System Information Block type 1 modification for FACH to DCH:T312 set to 2 seconds in connected mode	825	Rel-5	F	5.7.1	5.8.0
T1-040942	Corrections to Table 8.3.7-1 in relation to Package 2 test cases 8.3.7.x (Editorial Revision of T1-040669)	826	Rel-5	F	5.7.1	5.8.0
T1-040943	Revisions to Package 3 measurement test cases 8.4.1.31 and 8.4.1.40 (Revision of T1-040665)	827	Rel-5	F	5.7.1	5.8.0
T1-040944	Correction of test case description for test case 8.1.6.4	828	Rel-5	F	5.7.1	5.8.0
T1-040945	CR to 34.123-1 REL-5; Correction to package 4 RRC test cases 8.2.3.11, 8.2.6.11 and 8.2.6.12	829	REL-5	F	5.7.1	5.8.0
T1-040947	Correction to low priority radio bearer test cases (minimum set of TFCS)	830	REL-5	F	5.7.1	5.8.0
T1-040949	CR 34.123-1 Rel-5: Corrections to MM test cases to include GMM procedures	831	Rel-5	F	5.7.1	5.8.0
T1-040950	Correction to package 3 GMM test case 12.4.2.5a	832	REL-5	F	5.7.1	5.8.0
T1-040951	Modification for GMM test cases (P4 and low priority test cases)	833	Rel-5	F	5.7.1	5.8.0
T1-040954	CR 34.123-1 Rel-5: Correction to package 2 MM test case 9.4.8	834	Rel-5	F	5.7.1	5.8.0
T1-040955	CR to 34.123-1 REL-5; New A-GPS test cases	835	REL-5	F	5.7.1	5.8.0
T1-040956	Correction to package 2 MM testcase 9.1 to align with TTCN implementation.(Revision of T1-040551)	836	Rel-5	F	5.7.1	5.8.0
T1-040958	CR 34.123-1 Rel-5: Correction to package 2 MAC test case 7.1.3.1	837	Rel-5	F	5.7.1	5.8.0

T1-040959	CR to 34.123-1 Rel 5: Correction to package 2 RRC test case 8.4.1.2	854	Rel-5	F	5.7.1	5.8.0
T1-040962	Correction to Package 1 SM TC 11.3.1 RAB release location	838	Rel-5	F	5.7.1	5.8.0
T1-040963	Correction to Package 1 SM TC 11.3.2 RAB release location	839	Rel-5	F	5.7.1	5.8.0
T1-040964	Corrections to Package 2 test case 9.4.2.4 Procedure 2	840	Rel-5	F	5.7.1	5.8.0
T1-040966	Correction to P4 GMM Test Case 12.4.1.1b	841	Rel-5	F	5.7.0	5.8.0
T1-040967	CR to 34.123-1 REL-5; Corrections to HSDPA RRC test cases	842	REL-5	F	5.7.1	5.8.0
T1-040968	Correction to Package III SMS Test Case 16.2.1 (Revision of T1-040548)	843	Rel-5	F	5.7.1	5.8.0
T1-040969	CR 34.123-1 Rel-5: Correction to package 3 SMS test case 16.1.1	844	Rel-5	F	5.7.1	5.8.0
T1-040971	Corrections to P2 PLMN and RAT selection test cases in Multi-mode environment (2G/3G case)	845	Rel-5	F	5.7.1	5.8.0
T1-040973	Corrections to SRNS relocation PDCP test cases	780	Rel-5	F	5.7.1	5.8.0
T1-040974	CR to 34.123-1 REL-5; New HSDPA RRC test cases	846	REL-5	F	5.7.1	5.8.0
T1-040975	Corrections to Seamless SRNS relocation RRC test cases (Revision to T1-040712)	847	Rel-5	F	5.7.1	5.8.0
T1-040976	New SRNS relocation test cases (Revision of T1-040714)	848	Rel-5	F	5.7.1	5.8.0
T1-040977r1	Addition of 6 new Inter-RAT test cases.	852	Rel-5	F	5.7.1	5.8.0
T1-040978	Add HCR TDD content of Inter-frequency measurement for event 2D and 2F	849	Rel-5	F	5.7.1	5.8.0
T1-040979	Change to Test Requirement of Cell Reselection Case: 8.3.9.1(Revision of T1-040588)	850	REL-5	F	5.7.1	5.8.0
T1-040980	Correction to low priority TC 11.1.2	851	Rel-5	F	5.7.1	5.8.0

CHANGE REQUEST

⌘ **TS 34.123-1 CR 753** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 TS 34.123-1 R5; Correction to low priority RRC TCs 8.1.8.3 and 8.2.1.13.		
Source:	⌘ Ericsson, ETSI		
Work item code:	⌘ TEI	Date:	⌘ 08/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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. Conformance requirement out of date. 2. In TC 8.1.8.3 under test requirements it is incorrectly mentioned a RADIO BEARER RECONFIGURATION COMPLETE message. It should be a RADIO BEARER SETUP COMPLETE message. 3. IE Message Type incorrect in step 8 in specific message contents for TC 8.2.1.13.
Summary of change:	⌘	1. Conformance requirement updated. 2. RADIO BEARER RECONFIGURATION COMPLETE message changed to be RADIO BEARER SETUP COMPLETE message. 3. IE Message Type removed in step 8 in specific message contents for TC 8.2.1.13.
Consequences if not approved:	⌘	TC will fail a conformant UE.

Clauses affected:	⌘ TC 8.1.8.3 and 8.2.1.13						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/>	Test specifications						
<input checked="" type="checkbox"/>	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.

8.1.8.3 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
<p>RAB information for setup</p> <ul style="list-style-type: none"> - RAB info - RAB identity - CN domain identity - NAS Synchronization Indicator - Re-establishment timer - RB information to setup - RB identity - PDCP info <ul style="list-style-type: none"> - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header - Header compression information - CHOICE RLC info type - CHOICE Uplink RLC mode <ul style="list-style-type: none"> - Transmission RLC discard - CHOICE SDU discard mode - Segmentation indication - CHOICE Downlink RLC mode - RB mapping info <ul style="list-style-type: none"> - Information for each multiplexing option - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list - MAC logical channel priority - Downlink RLC logical channel info <ul style="list-style-type: none"> - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - Logical channel identity - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list <ul style="list-style-type: none"> - RLC size index - MAC logical channel priority - Downlink RLC logical channel info <ul style="list-style-type: none"> - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - Logical channel identity 	<p>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. PS domain or CS domain (depending on the domain supported by the UE)</p> <p>Not Present UseT315 (for PS domain) or UseT314 (for CS domain)</p> <p>9</p> <p>FALSE Not present Absent Not present RLC info TM RLC</p> <p>Not Present False UM RLC</p> <p>2 RBMuxOptions Not Present 1 DCH 4 Not Present Configured 8</p> <p>1 DCH 9 Not Present Not Present Not Present 1 RACH Not Present 7 Explicit List Reference to TS34.108 clause 6 Parameter Set 8</p> <p>1 FACH Not Present Not Present 7</p>
<p>Added or Reconfigured TrCH information list</p> <ul style="list-style-type: none"> - Added or Reconfigured UL TrCH information <ul style="list-style-type: none"> - Uplink transport channel type - UL Transport channel identity - TFS <ul style="list-style-type: none"> - CHOICE Transport channel type - Dynamic Transport format information - RLC Size - Number of TBs and TTI List - Transmission Time Interval - Number of Transport blocks - CHOICE Logical Channel list - Semi-static Transport Format information - Transmission time interval - Type of channel coding 	<p>1 DCH added</p> <p>DCH 4</p> <p>Dedicated transport channels</p> <p>Reference to TS34.108 clause 6.10 Parameter Set (This IE is repeated for TFI number.) Not Present Reference to TS34.108 clause 6.10 Parameter Set All</p> <p>Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set</p>

- 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	0
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
RB COUNT-C MSB information	
- RB COUNT-C MSB information	
- RB identity	9
- COUNT-C MSB uplink	Arbitrary
- COUNT-C MSB downlink	Set to current COUNT-C for RB#9 in downlink

COUNTER CHECK RESPONSE (Step 5)

Information Element	Value/remark
Message Type	
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	
- RB identity	Check to see if set to 9
- COUNT-C uplink	Check to see if it is present
- COUNT-C downlink	Check to see if it is present

8.1.8.3.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER ~~RECONFIGURATION~~ SETUP COMPLETE message on the uplink DCCH.

After step 4, the UE shall transmit a COUNTER CHECK RESPONSE message.

8.2.1.13 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Physical channel Failure and cell reselection)

8.2.1.13.1 Definition

8.2.1.13.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel ~~establishment~~ failure".

....

If the received message caused the UE to be in CELL_DCH state and the UE [according to subclause 8.5.4](#) failed to establish the dedicated physical channel(s) indicated in the received message the UE shall:

1> If the CM_PATTERN_ACTIVATION_ABORTED flag is not set to TRUE the UE shall:~~1> revert to the configuration prior to the reception of the message (old configuration);~~

...

1> if the old configuration does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to TS 25.304;

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> 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 the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and~~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";

- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI";

the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

....

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 8.2.2.7, 8.2.2.9, 8.3.1.7, 8.5.4.

8.2.1.13.3 Test purpose

To confirm that the UE transmit a RADIO BEARER SETUP FAILURE message after it completes a cell update for the physical channel failure in the radio bearer establishment procedure.

8.2.1.13.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108 in cell 1.

Test Procedure

Table 8.2.1.13

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	-75	-75	-60
P-CCPICH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.1.13 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 reverse of the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure its DL dedicated physical channel in accordance with the setting in the message and release its current configuration. At the same time, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.1.13. The UE recognize that it cannot synchronize with the SS on the new radio bearer. The UE performs cell re-selection and transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" which is set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE transmits a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

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		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER SETUP	
2				The SS does not configure the new radio bearer in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.1.13.
3			Void	
4				The UE select the cell 2.
5		→	CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI".
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "physical channel failure"
9		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- 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	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 9)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions and the order in which the RBs are reported is not checked:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- 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
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 SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type "Packet to CELL_DCH from CELL_FACH in PS" found in clause 9 of TS 34.108.

CELL UPDATE (Step 5)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 6)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM" message as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 5
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

RADIO BEARER SETUP FAILURE (Step 8)

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 clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"

8.2.1.13.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

After step 8, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

CHANGE REQUEST

⌘ **TS 34.123-1 CR 754** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 TS 34.123-1 R5; Correction to low priority RRC TCs TC 8.1.6.4, 8.1.9a and 8.1.9b.		
Source:	⌘ Ericsson, ETSI		
Work item code:	⌘ TEI	Date:	⌘ 08/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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:	⌘ <ol style="list-style-type: none"> 1. Conformance requirement out of date 2. IE "Uplink counter synchronisation info" is changed in default messages to Not present (This CR is dependant on approval of CRs T1-040510-512 for TS 34.108). Therefor the IE can be removed in TC 8.1.6.4, 8.1.9a and 8.1.9b. 3. IE "Downlink counter synchronisation info" is in default messages set to Not present.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Conformance requirement updated. 2. IE "Uplink counter synchronisation info" removed in TC 8.1.6.4, 8.1.9a and 8.1.9b 3. IE "Downlink counter synchronisation info" removed in TC 8.1.6.4, 8.1.9a and 8.1.9b
Consequences if not approved:	⌘ TC will fail a conformant UE.

Clauses affected:	⌘ 8.1.6.4, 8.1.9a, 8.1.9b										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications	Y	N		X		X		X	⌘	
Y	N										
	X										
	X										
	X										
	Test specifications	⌘									
	O&M Specifications	⌘									

Other comments: ☞ Affects R99, Rel4 and Rel5 UEs. This CR is dependant on approval of CRs T1-040510-512 for TS 34.108.

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.

8.1.6.4 UPLINK Direct Transfer (RLC re-establishment)

8.1.6.4.1 Definition

8.1.6.4.2 Conformance requirement

If signalling radio bearer RB n (where n equals to 3 or 4) was used when transmitting the UPLINK DIRECT TRANSFER message and a re-establishment of RLC on same signalling radio bearer RB n occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

- 1> retransmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB n³.

Reference

3GPP TS 25.331 clause 8.1.10.2a.

8.1.6.4.3 Test purpose

To confirm that the UE transmits a second UPLINK DIRECT TRANSFER message after the re-establishment of RLC on RB3 which occurs before the successful delivery of the first UPLINK DIRECT TRANSFER message.

8.1.6.4.4 Method of test

Initial Condition

System Simulator: 1 cell – Cell 1 is active.

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For RRC CONNECTION SETUP message to be transmitted in the initial setup, use the default message given in TS 34.108 subclause 9 with the following exceptions:.

RRC CONNECTION SETUP

Information Element	Value/Remarks
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
- 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	128
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	1000
- Timer_poll	1000
- 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	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	3
- CHOICE RLC size list	Configured
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 for FDD, 6.10.3.4.1.3 for TDD 3.84 Mcps option or 6.11.5.4.1.3 for TDD 1.28 Mcps option (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of 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	3

Test Procedure

UE is in CELL_DCH. SS set the RLC entity for SRB3 to stop. SS requests operator to deactivate the established PDP context. Then the UE shall transmit an UPLINK DIRECT TRANSFER message on the uplink DCCH. SS does not acknowledge the AM PDUs carrying UPLINK DIRECT TRANSFER message. The SS then sends a UTRAN MOBILITY INFORMATION message on SRB1 requesting the UE to do a SRNS relocation, 5s after asking the operator to deactivate the established PDP context. The UE shall send a UTRAN MOBILITY INFORMATION CONFIRM message on SRB2. The SS set the RLC entity for SRB3 to continue upon receiving UTRAN MOBILITY INFORMATION CONFIRM message. Then UE shall retransmit an UPLINK DIRECT TRANSFER message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS set the RLC entity for SRB3 to stop. SS requests operator to make an outgoing cal.
2		→	UPLINK DIRECT TRANSFER	.
3		←	UTRAN MOBILITY INFORMATION	
4		→	UTRAN MOBILITY INFORMATION CONFIRM	UE sends this message on uplink DCCH on AM RLC. After the reception, SS configures RB 3 to continue.
5		→	UPLINK DIRECT TRANSFER	DEEACTIVATE PDP CONTEXT REQUEST message is embedded in UPLINK DIRECT TRANSFER message.

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Ciphering mode info - Ciphering mode command - Ciphering algorithm - Ciphering activation time for DPCH - Radio bearer downlink ciphering activation time info - Radio bearer activation time - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number	This presence of this IE is dependent on IXIT statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted. Start/restart UEA0 or UEA1. The indicated algorithm must be one of the algorithms supported by the UE as indicated in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message. (256+CFN-(CFN MOD 8 + 8))MOD 256, this IE is set to "Not present" if only PS RABs are established during the initial setup procedure. 1 Current RLC SN + 2 2 Current RLC SN + 2 3 Current RLC SN + 2 4 Current RLC SN + 2 20, this IE is set to "Not present" if PS RAB is not established during the initial setup procedure. Current RLC SN + 2
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. The first/ leftmost bit of the bit string contains the most significant bit of the FRESH.
New U-RNTI - SRNC identity - S-RNTI	0000 0000 0010B 0000 0000 0000 0000 0001B
Downlink counter synchronisation info —RB with PDCP information list	Not present

UTRAN MOBILITY INFORMATION CONFIRM (Step 4)

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 Not checked.

UPLINK DIRECT TRANSFER (Step 5)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - RRC Message sequence number CN domain identity NAS message Measured results on RACH	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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. PS domain DEACTIVATE PDP CONTEXT REQUEST Not checked

8.1.6.4.5 Test requirement

After step 3, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message using uplink DCCH on AM RLC and then retransmit UPLINK DIRECT TRANSFER message on the uplink DCCH.

8.1.9a Signalling Connection Release Indication (RLC re-establishment): CS signalling connection release

8.1.9a.1 Definition

8.1.9a.2 Conformance requirement

If a re-establishment of RLC on signalling radio bearer RB2 occurs before the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message has been confirmed by RLC, the UE shall:

- 1> retransmit the SIGNALLING CONNECTION RELEASE INDICATION message on the uplink DCCH using AM RLC on signalling radio bearer RB2.

Reference

3GPP TS 25.331 clause 8.1.14.2a.

8.1.9a.3 Test purpose

To confirm that the UE re-transmits a SIGNALLING CONNECTION RELEASE INDICATION message after it re-establishes the RLC entity on signalling radio bearer RB2 if SRNS relocation occurs before the successful delivery of SIGNALLING CONNECTION RELEASE INDICATION message.

8.1.9a.4 Method of test

Initial Condition

System Simulator: 1 cells – Cell 1.

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

The UE is in CELL_DCH mode. The SS transmits a DOWNLINK DIRECT TRANSFER message. This message contains a NAS message (AUTHENTICATION REQUEST for CS domain or AUTHENTICATION AND CIPHERING REQUEST for PS domain). The UE shall transmit an UPLINK DIRECT TRANSFER message (AUTHENTICATION RESPONSE) using AM on DCCH. After SS responses with a DOWNLINK DIRECT TRANSFER message (AUTHENTICATION REJECT), SS shall set the RLC entity for SRB2 to stop and wait for T3240 to expire in the UE. The UE shall send a SIGNALLING CONNECTION RELEASE INDICATION message which includes the CN domain identity with the same value as that in the UPLINK DIRECT TRANSFER message. But SS do not respond with STATUS PDU for the AM DATA PDU with POLL. The SS then sends a UTRAN MOBILITY INFORMATION message on SRB1 requesting the UE to do a SRNS relocation. SS shall set the RLC entity for SRB2 to continue. The UE shall send a UTRAN MOBILITY INFORMATION CONFIRM message. The UE shall re-transmit a SIGNALLING CONNECTION RELEASE INDICATION message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER (AUTHENTICATION REQUEST)	Depending on supported CN domain, AUTHENTICATION AND CIPHERING REQUEST message (PS domain) or AUTHENTICATION REQUEST (CS domain) message is embedded in DOWNLINK DIRECT TRANSFER message. An invalid SQN is provided in this message.
2		→	UPLINK DIRECT TRANSFER (AUTHENTICATION RESPONSE)	
3		←	DOWNLINK DIRECT TRANSFER (AUTHENTICATION REJECT)	After SS transmits this message, SS sets the RLC entity for SRB2 to stop and waits for T3240 to expire.
4		→	SIGNALLING CONNECTION RELEASE INDICATION	
5		←	UTRAN MOBILITY INFORMATION	. SS sets RLC for SRB2 to continue.
6		→	UTRAN MOBILITY INFORMATION CONFIRM	UE sends this message on uplink DCCH on AM.
7		→	SIGNALLING CONNECTION RELEASE INDICATION	UE re-transmits this message.

Specific Message Content

DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message sub-type as found in TS 34.108 clause 9, with the following exceptions.

Information Element	Value/remark
CN domain identity NAS message	CS domain or PS domain AUTHENTICATION REQUEST (CS domain) or AUTHENTICATION AND CIPHERING REQUEST (PS domain)

UPLINK DIRECT TRANSFER (Step 2)

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.
CN domain identity NAS message	CS domain or PS domain AUTHENTICATION FAILURE(CS domain) or AUTHENTICATION AND CIPHERING FAILURE (PS domain)
Measured results on RACH	Not checked

UTRAN MOBILITY INFORMATION (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Ciphering mode info - Ciphering mode command - Ciphering algorithm - Ciphering activation time for DPCH - Radio bearer downlink ciphering activation time info - Radio bearer activation time - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number	This presence of this IE is dependent on IXIT statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted. Start/restart UEA0 or UEA1. The indicated algorithm must be one of the algorithms supported by the UE as indicated in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message. (256+CFN-(CFN MOD 8 + 8))MOD 256, this IE is set to "Not present" if only PS RABs are established during the initial setup procedure. 1 Current RLC SN + 2 2 Current RLC SN + 2 3 Current RLC SN + 2 4 Current RLC SN + 2 20, this IE is set to "Not present" if PS RAB is not established during the initial setup procedure. Current RLC SN + 2
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. The first/ leftmost bit of the bit string contains the most significant bit of the FRESH.
New U-RNTI - SRNC identity - S-RNTI	0000 0000 0010B 0000 0000 0000 0000 0001B
Downlink counter synchronisation info — RB with PDCP information list	Not present

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

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 Not checked.

SIGNALLING CONNECTION RELEASE INDICATION (Step 7)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - 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. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
CN domain identity	Check to see if this value is the same as in the UPLINK DIRECT TRANSFER message.

8.1.9a.5 Test requirement

After step 1 the UE shall transmit UPLINK DIRECT TRANSFER messages using AM on DCCH.

After step 5, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message using uplink DCCH on AM RLC.

After step 6 the UE shall re-transmit a SIGNALLING CONNECTION RELEASE INDICATION message which includes the same CN domain identity as that found in the UPLINK DIRECT TRANSFER message.

8.1.9b Signalling Connection Release Indication (RLC re-establishment): PS signalling connection release

8.1.9b.1 Definition

8.1.9b.2 Conformance requirement

If a re-establishment of RLC on signalling radio bearer RB2 occurs before the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message has been confirmed by RLC, the UE shall:

- 1> retransmit the SIGNALLING CONNECTION RELEASE INDICATION message on the uplink DCCH using AM RLC on signalling radio bearer RB2.

Reference

3GPP TS 25.331 clause 8.1.14.2a.

8.1.9b.3 Test purpose

To confirm that the UE re-transmits a SIGNALLING CONNECTION RELEASE INDICATION message after it re-establishes the RLC entity on signalling radio bearer RB2 if SRNS relocation occurs before the successful delivery of SIGNALLING CONNECTION RELEASE INDICATION message.

8.1.9b.4 Method of test

Initial Condition

System Simulator: 1 cells – Cell 1 is active.

UE: Registered Idle Mode on PS (state 3) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in idle mode of cell 1. SS requests operator to initial an outgoing PS call. UE shall send RRC CONNECTION REQUEST message on the uplink CCCH. Then the SS shall respond with a RRC CONNECTION SETUP message, which request the UE to enter CELL_DCH state, on a downlink CCCH. The UE shall then send a RRC CONNECTION SETUP COMPLETE message on the uplink DCCH. After this, the UE shall send a INITIAL DIRECT TRANSFER message to SS. This message contains a NAS message (SERVICE REQUEST). After SS has acknowledge the INITIAL DIRECT TRANSFER message, the SS shall set the RLC entity for SRB3 to stop wait for T3240 to expire in the UE. The UE shall send a SIGNALLING CONNECTION RELEASE INDICATION message which includes the CN domain identity with the same value as that in the INITIAL DIRECT TRANSFER message. But SS do not respond with STATUS PDU for the AM DATA PDU with POLL. The SS then sends a UTRAN MOBILITY INFORMATION message requesting the UE to do SRNS relocation. The UE shall send a UTRAN MOBILITY INFORMATION CONFIRM message. The UE shall re-transmit a SIGNALLING CONNECTION RELEASE INDICATION message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	SS request the operator to make an outgoing PS call.
2		←	RRC CONNECTION SETUP	
3		→	RRC CONNECTION SETUP COMPLETE	
4		→	INITIAL DIRECT TRANSFER (SERVICE REQUEST)	After SS acknowledges this message, SS set the RLC entity for SRB2 to stop and waits for T3240 to expire.
5		→	SIGNALLING CONNECTION RELEASE INDICATION	SS do not send any RLC response (STATUS PDU).
6		←	UTRAN MOBILITY INFORMATION	SS sets RLC for SRB2 to continue.
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	SIGNALLING CONNECTION RELEASE INDICATION	UE re-transmits this message.

Specific Message Content

RRC CONNECTION REQUEST (Step 1)

Check that the UE sends the same message sub-type as found in TS 34.108 clause 9, with the following exceptions.

Information Element	Value/remark
Establishment cause	Originating Interactive Call or Originating Background Call
Measured results on RACH	Not checked.

RRC CONNECTION SETUP (Step 2)

Use the same message sub-type "RRC CONNECTION SETUP message: UM (Transition to CELL_DCH)" as found in TS 34.108 clause 9.

RRC CONNECTION SETUP COMPLETE (Step 3)

Check that the UE sends the same message sub-type as found in TS 34.108 clause 9.

INITIAL DIRECT TRANSFER (Step 4)

Check that the UE sends the same message sub-type as found in TS 34.108 clause 9, with the following exceptions.

Information Element	Value/remark
CN domain identity	PS domain
NAS message	SERVICE REQUEST

UTRAN MOBILITY INFORMATION (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9 with the following exception:

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Speech to CELL_DCH from CELL_DCH in CS " or "Non speech to CELL_DCH from CELL_DCH in CS", with the following exception:

Information Element	Value/remark
<p>Ciphering mode info</p> <ul style="list-style-type: none"> - Ciphering mode command - Ciphering algorithm - Ciphering activation time for DPCH - Radio bearer downlink ciphering activation time info - Radio bearer activation time - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number 	<p>This presence of this IE is dependent on IXIT statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted.</p> <p>Start/restart UEA0 or UEA1. The indicated algorithm must be one of the algorithms supported by the UE as indicated in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message.</p> <p>(256+CFN-(CFN MOD 8 + 8))MOD 256, this IE is set to "Not present" if only PS RABs are established during the initial setup procedure.</p> <p>1 Current RLC SN + 2</p> <p>2 Current RLC SN + 2</p> <p>3 Current RLC SN + 2</p> <p>4 Current RLC SN + 2</p> <p>20, this IE is set to "Not present" if PS RAB is not established during the initial setup procedure.</p> <p>Current RLC SN + 2</p>
<p>Integrity protection mode info</p> <ul style="list-style-type: none"> - Integrity protection mode command - Downlink integrity protection activation info - Integrity protection algorithm - Integrity protection initialisation number 	<p>Start Not Present UIA1 SS selects an arbitrary 32 bits number for FRESH. The first/ leftmost bit of the bit string contains the most significant bit of the FRESH.</p>
<p>New U-RNTI</p> <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	<p>0000 0000 0010B 0000 0000 0000 0000 0001B</p>
<p>Downlink counter synchronisation info —RB with PDCP information list</p>	<p>Not present</p>

UTRAN MOBILITY INFORMATION CONFIRM (Step 4)

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
<p>Uplink counter synchronisation info —RB with PDCP information list —START list</p>	<p>Not present Not checked.</p>

SIGNALLING CONNECTION RELEASE INDICATION (Step 8)

Information Element	Value/remark
<p>Message Type Integrity check info</p> <ul style="list-style-type: none"> - Message authentication code - RRC Message sequence number 	<p>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.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p>
<p>CN domain identity</p>	<p>Check to see if this value is the same as in the INITIAL DIRECT TRANSFER message.</p>

8.1.9b.5 Test requirement

In step 1, the UE shall transmit RRC CONNECTION REQUEST message using TM RLC on uplink CCCH.

After step 2, the UE shall transmit RRC CONNECTION SETUP COMPLETE message using AM RLC on uplink DCCH.

After step 3 the UE shall transmit INITIAL DIRECT TRANSFER messages using AM on DCCH.

After step 6, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message using uplink DCCH on AM RLC.

After step 7 the UE shall re-transmit a SIGNALLING CONNECTION RELEASE INDICATION message which includes the same CN domain identity as that found in the INITIAL DIRECT TRANSFER message.

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 755 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 MAC-hs test cases		
Source:	⌘ Ericsson		
Work item code:	⌘ HSDPA	Date:	⌘ 2004-04-16
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Initial condition for SS not specified.
Summary of change:	⌘ Initial condition for SS specified for MAC-hs test cases 7.1.5.1, 7.1.5.2, 7.1.5.3 and 7.1.5.4
Consequences if not approved:	⌘ Incorrect references to 34.108.

Clauses affected:	⌘ 7.1.5.1.4, 7.1.5.2.4, 7.1.5.3.4 and 7.1.5.4.4										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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.

7.1.5 HS-DSCH MAC-hs

7.1.5.1 MAC-hs reordering and stall avoidance

7.1.5.1.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.1.2 Conformance requirement

When a MAC-hs PDU with TSN = SN is received:

- If SN is within the receiver window:
 - if $SN < next_expected_TSN$, or this MAC-hs PDU has previously been received:
 - the MAC-hs PDU shall be discarded.
 - else:
 - the MAC-hs PDU is placed in the reordering buffer at the place indicated by the TSN.
 - If SN is outside the receiver window:
 - the received MAC-hs PDU shall be placed above the highest received TSN in the reordering buffer, at the position indicated by SN;
 - RcvWindow_UpperEdge shall be set to SN thus advancing the receiver window;
 - any MAC-hs PDUs with $TSN \leq RcvWindow_UpperEdge - RECEIVE_WINDOW_SIZE$, i.e. outside the receiver window after its position is updated, shall be removed from the reordering buffer and be delivered to the disassembly entity;
 - next_expected_TSN shall be set to $RcvWindow_UpperEdge - RECEIVE_WINDOW_SIZE + 1$;
 - All received MAC-hs PDUs with consecutive TSNs from next_expected_TSN (included) up to the first not received MAC-hs PDU are delivered to the disassembly entity.
 - next_expected_TSN shall be advanced to the TSN of this first not received MAC-hs PDU.

[...]

If no timer T1 is active:

- the timer T1 shall be started when a MAC-hs PDU with $TSN > next_expected_TSN$ is correctly received.
- T1_TSN shall be set to the TSN of this MAC-hs PDU.

If a timer T1 is already active:

- no additional timer shall be started, i.e. only one timer T1 may be active at a given time.

The timer T1 shall be stopped if:

- the MAC-hs PDU with $TSN = T1_TSN$ can be delivered to the disassembly entity before the timer expires.

When the timer T1 expires and $T1_TSN > next_expected_TSN$:

- all correctly received MAC-hs PDUs with $TSN > next_expected_TSN$ up to and including $T1_TSN-1$ shall be delivered to the disassembly entity;
- all correctly received MAC-hs PDUs up to the next not received MAC-hs PDU shall be delivered to the disassembly entity.
- next_expected_TSN shall be set to the TSN of the next not received MAC-hs PDU.

When the timer T1 is stopped or expires, and there still exist some received MAC-hs PDUs that can not be delivered to higher layer:

- timer T1 is started
- set T1_TSN to the highest TSN among those of the MAC-hs PDUs that can not be delivered.

[...]

Reference(s)

TS 25.321 clauses 11.6.2.3.1, 11.6.2.3.2

7.1.5.1.3 Test purpose

1. To confirm that the UE performs MAC-hs reordering and delivers RLC PDUs in order to RLC.
2. To confirm that the UE performs stall avoidance in case of missing MAC-hs PDUs based on a) window based stall avoidance and b) timer based stall avoidance.

7.1.5.1.4 Method of test

Initial conditions

System Simulator:

[1 cell, default parameters, Ciphering Off](#) ~~Default configurations for HS-DSCH tests [FSS]~~

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). During the procedure the radio bearer defined in TS 34.108 clause [TBD] shall be established. The following parameters are specific for this test case:

Parameter	Value
MAC-hs receiver window size	32
MAC-hs reordering timer T1	400 ms

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 39 octets.

Let T be the value of MAC-hs reordering timer T1 parameter.

Test procedure

In this test procedure each MAC-hs PDU contains one RLC PDU carrying one SDU of size 39 octets and one length indicator indicating the end of the SDU.

- a) The SS transmits a MAC-hs PDU with Transmission Sequence Number (TSN) = 0 containing an RLC PDU with SN=0.
- b) The SS transmits a MAC-hs PDU with TSN = 1 containing an RLC PDU with SN=1.
- c) The SS checks that the RLC PDUs with SN=0,1 are looped back
- d) The SS repeats the transmission of the MAC-hs PDUs in step a) and b) with identical content except that the RLC PDUs have SN 2,3
- e) The SS checks that no data is looped back (the data is discarded in the UE)
- f) The SS transmits a MAC-hs PDU with TSN = 3 containing an RLC PDU with SN=3

- g) The SS waits 400 ms and checks that no data is looped back and no RLC status report is received during that time
- h) The SS transmits a MAC-hs PDU with TSN = 2 containing an RLC PDU with SN=2
- i) The SS checks that the RLC PDUs with SN = 2,3 are looped back
- j) The SS transmits a MAC-hs PDU with TSN = 6 containing an RLC PDU with SN=4
- k) The SS transmits a MAC-hs PDU with TSN = 7 containing an RLC PDU with SN=5
- l) The SS transmits a MAC-hs PDU with TSN = 38 containing an RLC PDU with SN=6
- m) The SS checks that the RLC PDU with SN = 4 and 5 is looped back but the RLC PDU with SN = 6 is not looped back
- n) The SS waits 400 ms and checks that the RLC PDU with SN = 6 is looped back after this time

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		MAC-hs PDU with TSN = 0, containing RLC PDU with SN = 0	
2	→		RLC PDU with SN 0	
3	←		MAC-hs PDU with TSN = 1, containing RLC PDU with SN = 1	
4	→		RLC PDU with SN 1	
5	←		MAC-hs PDU with TSN = 0, containing RLC PDU with SN = 2	The duplicated data is discarded in the UE
6	←		MAC-hs PDU with TSN = 1, containing RLC PDU with SN = 3	The duplicated data is discarded in the UE
7	←		MAC-hs PDU with TSN = 3, containing RLC PDU with SN = 3	
8			SS waits T ms and checks that no data is looped back and no RLC status report is received	The waiting time may need to be adjusted to assure that T1 has not expired in the UE
9	←		MAC-hs PDU with TSN = 2, containing RLC PDU with SN = 2	
10	→		RLC PDUs with SN 2,3	
11	←		MAC-hs PDU with TSN = 6, containing RLC PDU with SN = 4	
12	←		MAC-hs PDU with TSN = 7, containing RLC PDU with SN = 5	
13	←		MAC-hs PDU with TSN = 38, containing RLC PDU with SN = 6	SS need to transmit this PDU before timer T1 in UE expires (400 ms after reception of MAC-hs PDU with TSN=6). Note: T _A
14	→		RLC PDUs with SN 4,5	The RLC PDUs with SN = 4,5 is looped back after reception of the MAC_hs PDU in step 13, i.e. before timer T1 expires
15			SS waits T ms and checks that the RLC PDU with SN = 6 is not looped back during this time	
16	→		RLC PDU with SN 6	The RLC PDU with SN = 6 is looped back after expiry of T1. Note: T _B
<p>NOTE 1: The RLC SN in step 5,6 is increased since otherwise the data would be discarded by RLC even if the MAC-hs reordering does not work correctly. Since the data is discarded the same RLC SN can be reused later in the test sequence.</p> <p>NOTE 2: In step 8 the absence of an RLC status report is used to check that the RLC PDU with SN = 3 is not delivered to RLC. If the RLC PDU was delivered to RLC the gap in the SN would trigger a status report (detection of missing PDUs).</p> <p>NOTE3: In step13, the timer T1 is restarted in the UE since the PDU with TSN = 38 can not be delivered to higher layers.</p> <p>NOTE 4: General timer tolerance as defined by 34.108 sub-clause 4.2.3 applies.</p>				

Specific Message Contents

None

7.1.5.1.5 Test requirements

1. After step 1, the RLC PDU with SN = 0 shall be looped back
2. After step 3, the RLC PDU with SN = 1 shall be looped back
3. After step 5 and 6 , no data shall be looped back
4. After step 7, no data shall be looped back and no RLC status report shall be received
5. After step 9, the RLC PDUs with SN = 2,3 shall be looped back

6. After step 13, the RLC PDUs with SN = 4,5 shall be looped back
7. In step 16, the RLC PDU with SN = 6 shall be looped back and $T_B - T_A$ shall be equal to T_{ms} .

7.1.5.2 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.](#) ~~Default configurations for HS-DSCH tests [FSS]~~

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-DCCCH + DTCH HS-DSCH). A radio bearer configuration is configured according to the following:

Logical Channel ID	MAC-d flow (DL) / TrCH ID (UL)	Queue ID	Comment
1	1	0	
2	1	0	
3	2	1	
4	2	2	
5	3	3	
NOTE: LCH 1-2 emulates logical channels with the same priority whereas LCH 3-4 emulates logical channels with different priorities.			

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 39 octets.

Test procedure

In this test procedure each MAC-hs PDU contains one RLC PDU carrying one SDU of size 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

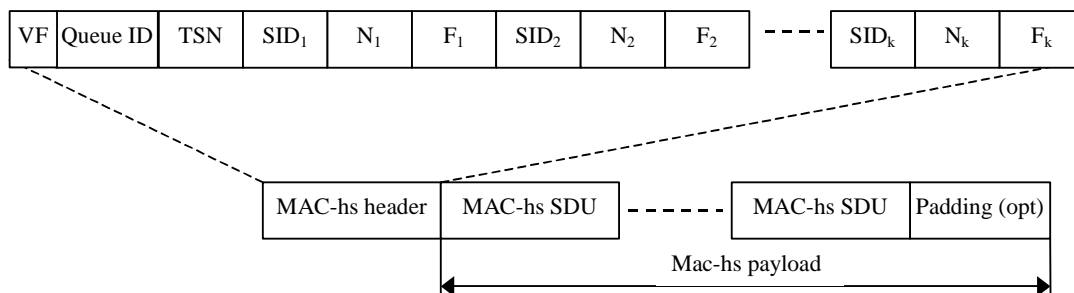
7.1.5.3 MAC-hs PDU header handling

7.1.5.3.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.3.2 Conformance requirement

MAC PDU (HS-DSCH):



[...]

The following fields are included in the MAC header for HS-DSCH:

- Version Flag (VF):
The VF field is a one bit flag providing extension capabilities of the MAC-hs PDU format. The VF field shall be set to zero and the value one is reserved in this version of the protocol.
- Queue identifier (Queue ID):
The Queue ID field provides identification of the reordering queue in the receiver, in order to support independent buffer handling of data belonging to different reordering queues. The length of the Queue ID field is 3 bit.
- Transmission Sequence Number (TSN):
The TSN field provides an identifier for the transmission sequence number on the HS-DSCH. The TSN field is used for reordering purposes to support in-sequence delivery to higher layers. The length of the TSN field is 6 bit.
- Size index identifier (SID):
The SID fields identifies the size of a set of consecutive MAC-d PDUs. The MAC-d PDU size for a given SID is configured by higher layers and is independent for each Queue ID. The length of the SID field is 3 bit.
- Number of MAC-D PDUs (N):
The number of consecutive MAC-d PDUs with equal size is identified with the N field. The length of the N field is 7 bits. In FDD mode, the maximum number of PDUs transmitted in a single TTI shall be assumed to be 70. In 1.28 Mcps TDD mode, the maximum number of PDUs transmitted in a single TTI shall be assumed to be 45. In 3.84 Mcps TDD mode, the maximum number of PDUs transmitted in a single TTI shall be assumed to be 318. If more PDUs than the defined maximum number of PDUs for the corresponding mode are received, the UE behaviour is unspecified.
- Flag (F):
The F field is a flag indicating if more SID fields are present in the MAC-hs header or not. If the F field is set to "0" the F field is followed by a SID field. If the F field is set to "1" the F field is followed by a MAC-d PDU.

[...]

a) Use of reserved coding in the MAC header

If the MAC entity receives a MAC PDU with a header field using a value marked as reserved for this version of the protocol, it shall discard the PDU, unless explicitly mentioned otherwise.

b) Inconsistent MAC header

If the MAC entity receives a MAC PDU with a header inconsistent with the configuration received from RRC, it shall discard the PDU. E.g.: In case DTCH is mapped to RACH/FACH, the MAC entity shall discard a PDU with a C/T field indicating a logical channel number that is not configured.

[...]

Reference(s)

TS 25.321 clauses 9.1.4, 9.2.2, 10

7.1.5.3.3 Test purpose

1. To confirm that the UE discards PDUs with reserved values of the fields in the MAC header
2. To confirm that the UE discards PDUs with values in the MAC header that are inconsistent with the RRC configuration.
3. To confirm that the UE correctly reads the MAC header and disassembles the MAC-hs PDU into MAC-d PDUs and delivers the MAC-d PDUs to the RLC layer.

7.1.5.3.4 Method of test

Initial conditions

System Simulator:

[1 cell, default parameters, Ciphering Off.](#) ~~Default configurations for HS-DSCH tests [FSS]~~

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). The following parameters are specific for this test case:

Parameter	Value
UMD_PDU_size1	128 bit
UMD_PDU_size2	320 bit
Queue ID	0
Size Index Identifier (SID)	SID =0: 128 bit SID =1: 320 bit
MAC-hs reordering timer T1	400 ms
MAC-hs receiver window size	32

The RB is configured with 2 RLC PDU sizes UMD_PDU_size1 and UMD_PDU_size2.

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 14 octets.

Let T be the value of MAC-hs reordering timer T1 parameter.

Test procedure

- a) The SS transmits a MAC-hs PDU containing:

12 RLC UMD PDUs where:

RLC PDUs with SN= 0, 2, 4, 6, 8, 10 has the PDU size UMD_PDU_size1 and contains one SDU of length 15 octets and one length indicator indicating the end of the SDU.

RLC PDUs with SN= 1, 3, 5, 7, 9, 11 has the PDU size UMD_PDU_size2 and contains one SDU of length 39 octets and one length indicator indicating the end of the SDU.

The MAC fields in the MAC-hs header shall be set according to 25.321 with the following exception:

Field	Value
Version flag VF	1

- b) The SS checks that the UE does not loop back any data (since the MAC-hs PDU in the previous step is discarded)
- c) The SS again transmits a MAC-hs PDU as in a) above, but this time sets the fields in the MAC-hs header according to 25.321 with the following exception:

Field	Value
Size index identifier (SID)	2

The sequence numbers in the RLC headers shall be identical with those sent in a).

- d) The SS checks that the UE does not loop back any data (since the MAC-hs PDU in the previous step is discarded)
- e) The SS again transmits a MAC-hs PDU as in a) above, but this time sets the fields in the MAC-hs header according to 25.321. The sequence numbers in the RLC headers shall be identical with those sent in a).
- f) The SS checks that the UE loops back 12 RLC PDUs and checks the sequence numbers of the RLC PDUs

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		MAC-hs PDU with a reserved value of the version flag	discarded by the UE
2			wait for T ms	SS checks that no RLC PDUs are looped back (note)
3	←		MAC-hs PDU with a value of the size index identifier that is inconsistent with RRC configuration	discarded by the UE
4			wait for T ms	SS checks that no RLC PDUs are looped back (note)
5	←		MAC-hs PDU with correct values of the MAC-hs header	Accepted by the UE and the contained data is looped back.
6	→		RLC PDUs with SN 0,1, ...,11	
NOTE General timer tolerance as defined by 34.108 sub-clause 4.2.3 applies.				

Specific Message Contents

See test procedure

7.1.5.3.5 Test requirements

1. After step 1, no data shall be looped back to the SS
2. After step 3, no data shall be looped back to the SS
3. After step 5, the RLC PDUs with SN =0,1, ...,11 shall be looped back to the SS

7.1.5.4 MAC-hs retransmissions

7.1.5.4.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.4.2 Conformance requirement

[...]

The UE shall:

- if the New Data Indicator has been incremented compared to the value in the previous received transmission in this HARQ process or this is the first received transmission in the HARQ process:
 - replace the data currently in the soft buffer for this HARQ process with the received data.

- if the Transport Block Size index value is equal to 111111 (FDD only):
 - generate a positive acknowledgement (ACK) of the data in this HARQ process;
 - discard the received data;
 - assume that the data has been successfully decoded.
- if the New Data Indicator is identical to the value used in the previous received transmission in the HARQ process:
 - if the Transport Block Size index value is equal to 111111 (FDD only):
 - assume that the transport block size is identical to the last valid transport block size signalled for this HARQ process.
 - if the data has not yet been successfully decoded:
 - combine the received data with the data currently in the soft buffer for this HARQ process.
- if the data in the soft buffer has been successfully decoded and no error was detected:
 - deliver the decoded MAC-hs PDU to the reordering entity;
 - generate a positive acknowledgement (ACK) of the data in this HARQ process.
- else:
 - generate a negative acknowledgement (NAK) of the data in this HARQ process;
- schedule the generated positive or negative acknowledgement for transmission and the time of transmission relative to the reception of data in a HARQ process is configured by upper layer.

[...]

Reference(s)

TS 25.321 clauses 11.6.22

7.1.5.4.3 Test purpose

1. To confirm that the UE correctly transmit positive and negative acknowledgements when receiving MAC-hs PDUs

7.1.5.4.4 Method of test

Initial conditions

System Simulator:

[1 cell, default parameters, Ciphering Off.](#)~~Default configurations for HS-DSCH tests [FSS]~~

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-DCCCH + DTCH HS-DSCH). During the procedure the radio bearer defined in TS 34.108 clause [TBD] shall be established.

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 39 octets.

Test procedure

In this test procedure each MAC-hs PDU contains one RLC PDU carrying one SDU of size 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 HARQ process id = 0
 3. The Queue ID = 0
 4. The MAC-hs PDU contains an RLC PDU with SN=0.
 5. The physical layer CRC is modified such that the CRC check in the UE will fail
- b) The SS checks that a negative acknowledgement is received for the correct HARQ process
- c) The SS transmits a MAC-hs PDU with the same content as in step a) but where the CRC is correct
- d) The SS checks that a positive acknowledgement is received for the correct HARQ process
- e) The SS repeats steps a), b), c), d) with the HARQ process, TSN and RLC SN set as follows for iteration 2 to 7:

Iteration	HARQ process	TSN	RLC SN
1	0	0	0
2	1	1	1
3	2	2	2
4	3	3	3
5	4	4	4
6	5	5	5
7	6	6	6
8	7	7	7

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		MAC-hs PDU sent in process N	Erroneous CRC
2		→	MAC-hs negative acknowledgement with process id = N	
3	←		MAC-hs PDU sent in process N	
4		→	MAC-hs positive acknowledgement with process id = N	

NOTE: The process id N in step 1-4 is taken from the table in the Test procedure description above.

Steps 1 to 4 of the expected sequence are repeated for iteration 2-8.

7.1.5.4.5 Test requirements

1. After step 1, a MAC-hs negative acknowledgement shall be received for the correct HARQ process
2. After step 3, a MAC-hs positive acknowledgement shall be received for the correct HARQ process

CHANGE REQUEST

⌘ **34.123-1 CR 759** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 low priority GMM TC 12.4.1.5		
Source:	⌘ Nokia, MCC 160		
Work item code:	⌘ TEI	Date:	⌘ 19/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Mistakes in the Expected Sequence. In the beginning of test case the UE has to be powered up or switched on before it can initiate a registration. Step 23a is not needed as the SS is in network operation mode II.
Summary of change:	⌘ 1) Step 2a in the Expected Sequence marked as Void and Step 3a Registration on CS added. 2) Step 23a in the Expected Sequence marked as Void.
Consequences if not approved:	⌘ Incorrect Expected Sequence in the test case.

Clauses affected:	⌘ 12.4.1.5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.123-3
Y	N										
	X										
X											
	X										
		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>

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 T3330 timeout.

When a T3330 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.

T3330; set to 15 seconds.

T3311; set to 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode C (see ICS).
2a	UE		Registration on CS <u>Void</u>	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) See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
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		<u>Registration on CS</u>	<u>See TS 34.108</u> <u>This step is applied only for UE in UE operation mode A.</u> <u>Parameter mobile identity is TMSI.</u>
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
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		SS		Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'Congestion'
9		<-	ROUTING AREA UPDATE REJECT	
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' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'Congestion'
12		<-	ROUTING AREA UPDATE REJECT	
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' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'Congestion'
15		<-	ROUTING AREA UPDATE REJECT	
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds

Step	Direction		Message	Comments
	UE	SS		
17		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'Congestion'
18		<-	ROUTING AREA UPDATE REJECT	
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'
21		<-	ROUTING AREA UPDATE REJECT	P-TMSI-2 signature Routing area identity = RAI-1 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		UE	Registration on CS Void	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
24		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
25		<-	ROUTING AREA UPDATE ACCEPT	P-TMSI-2 signature Routing area identity = RAI-1 Update result = 'RA updated' Mobile identity = P-TMSI-2 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, PS 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 T3330 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

<END OF MODIFIED SECTION>

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 760 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 P4 GMM TCs 12.2.1.5d and 12.4.1.4d		
Source:	⌘ Nokia, MCC 160		
Work item code:	⌘ TEI	Date:	⌘ 19/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 TC 12.2.1.5d, UE is required to answer to paging when send in step 19. In TC 12.4.1.4d, the UE doesn't need to include TMSI status IE in ATTACH REQUEST message as it is not used in NMO II.
Summary of change:	⌘ 1) In TC 12.2.1.5d, step 20 in the Expected Sequence deleted. In step 19 it is the SS that sends PAGING TYPE1 message. 2) In TC 12.4.1.4d Test procedure1 and Test procedure2 step 4 of the Expected Sequence, "TMSI status = no valid TMSI available" is deleted.
Consequences if not approved:	⌘ Incorrect Expected sequence in the test cases.

Clauses affected:	⌘ 12.2.1.5d and 12.4.1.4d										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N		X	X			X	⌘	34.123-3
Y	N										
	X										
X											
	X										
Other comments:	⌘ Affects R99, Rel-4 and Rel-5.										

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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>

12.2.1.5d 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 'PS service 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.

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 'PS service not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3		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)
4	UE		Registration on CS	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
5		->	ATTACH REQUEST	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1 Attach type = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1 Detach type = re-attach required
7		<-	DETACH REQUEST	
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 = 'PS attach' Mobile identity = P-TMSI-1
11		<-	ATTACH REJECT	GMM cause = 'PS service 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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-7
18		->	ATTACH COMPLETE	
19		UE	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20		SS	Void	No response from the UE to the request. This is checked for 10 seconds.
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 PS / 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.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

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 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 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		
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 "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
4	->		ATTACH REQUEST	Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1. Attach type = ' PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7		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)
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.
9	->		ROUTING AREA UPDATE REQUEST	Parameter mobile identity is TMSI-1. Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this 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		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)
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.
20			Void	Parameter mobile identity is TMSI-1.

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' Mobile identity = P-TMSI-1 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-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 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 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		
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 "Suitable neighbour cell". (see note)
		SS		
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108
4	->		ATTACH REQUEST	Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1. Attach type = ' PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7		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)
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.
9	->		ROUTING AREA UPDATE REQUEST	Parameter mobile identity is TMSI-1. Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this 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 = ' PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile 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, PS 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 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.

<END OF MODIFIED SECTION>

CHANGE REQUEST

34.123-1 CR 855 # rev **-** # Current version: **5.7.1**

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 several GMM TCs to include equivalent PLMN IE		
Source:	# Nokia, MCC 160		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# In the test spec, the equivalent PLMN IE is not always required in ACCEPT messages. This is not necessarily wrong, but should be added in the test cases because normally a real network would include it.
	In GMM test cases, MCC1/MNC1 is used for cells in HPLMN. However, in TC 12.9.6 MCC1/MNC1 is used as "not HPLMN" so running this test case would require second USIM configuration, different than what is used in the rest of GMM test cases. This is not sensible.
Summary of change:	# 1) Equivalent PLMNs IE is added in the Expected sequence of the following test cases: <ul style="list-style-type: none"> • 12.2.1.5b (P4), ATTACH ACCEPT in step 19 • 12.2.1.5c (low), ATTACH ACCEPT in step 17 • 12.2.1.5d (P4), ATTACH ACCEPT in step 17 • 12.2.2.7a (low), ATTACH ACCEPT in steps 22 and 46 • 12.2.2.7b (low), ATTACH ACCEPT in step 17 • 12.2.2.7d (low), ATTACH ACCEPT in step 18 • 12.3.2.8 proc 1 (low), ATTACH ACCEPT in step 24 and ROUTING AREA UPDATING ACCEPT in step 28 • 12.4.1.1a (P1), ROUTING AREA UPDATE ACCEPT in steps 9 and 25 • 12.4.1.4a (P4), ATTACH ACCEPT in steps 19 and 25 and ROUTING AREA UPDATE ACCEPT in step 30 • 12.4.1.4b (P4), ROUTING AREA UPDATE ACCEPT in step 10 • 12.4.1.4c proc 1 (P4), ATTACH ACCEPT in step 18 • 12.4.2.5c (low), ATTACH ACCEPT in step 16 • 12.4.2.5d (low), ATTACH ACCEPT in step 15

2) Initial conditions changed in TC 12.9.6 (P4), 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).

Consequences if not approved: ⌘ Test cases are not in line with normal network behaviour.

Clauses affected: ⌘ See Summary of change.

Other specs affected:	⌘	Y	N	Other core specifications	⌘	34.123-3	
			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>

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.

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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20		->	ATTACH COMPLETE	

20a	SS		DETACH REQUEST	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	->			Message not sent if power is removed.
23	SS			Detach type = 'power switched off, PS detach' 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 that 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.

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		
1		SS		The following messages are sent and shall be received on cell A. 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.
		UE		
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 = 'PS 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 = 'PS 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 = 'PS 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 = 'PS attach' Mobile identity = IMSI
14		<-	AUTHENTICATION AND CIPHERING REQUEST	
15		->	AUTHENTICATION AND CIPHERING RESPONSE	

16	SS		ATTACH ACCEPT	The SS starts integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1.MNC1
17	<-			
18	->		ATTACH COMPLETE	No MM IMSI attach request sent to SS (SS waits 30 seconds).
19	UE			
19a	SS			The SS releases the RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
20a	SS		Detach on CS	SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach".
20b	UE			This is applied only for UE in UE operation mode A.
21	->			Message not sent if power is removed. Detach type = 'power switched off, PS 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 'PS service 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.

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 'PS service not allowed in this PLMN'. The SS checks that the UE performs PS attach with attach type = PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3		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)
4	UE		Registration on CS	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
5	->		ATTACH REQUEST	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1 Attach type = 'PS attach'
5a	<-		AUTHENTICATION AND CIPHERING REQUEST	Mobile identity = P-TMSI-1
5b	->		AUTHENTICATION AND CIPHERING RESPONSE	
5c		SS		The SS starts integrity protection.
6	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = 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 = 'PS attach' Mobile identity = P-TMSI-1
11	<-		ATTACH REJECT	GMM cause = 'PS service 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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-7 Equivalent PLMNs = MCC1,MNC1
18	->		ATTACH COMPLETE	
19	UE		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20		SS		No response from the UE to the request. This is checked for 10 seconds.
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 PS / 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.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

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		
1		SS		The following messages are sent and shall be received on cell A.
		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".
2		UE		(see note) 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 PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1
3b		<-	ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile 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 PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 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
11		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)
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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile 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 PS / 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 "Non-Suitable cell". Set the cell type of cell C to the "Serving 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 PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile 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 PS / 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)

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		
1		SS		The following message 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 PS / IMSI attach' Mobile identity = P-TMSI-1
5	<-		ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Mobile 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 PS / IMSI attach' Mobile identity = P-TMSI-1
10	<-		ATTACH REJECT	Routing area identity = RAI-1 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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile 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, PS 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 area 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 area not allowed in this location area'. The SS checks that the UE performs PLMN selection.

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 PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'Roaming area 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.
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 LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15	->		ATTACH REQUEST	Attach type = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
17	->		ATTACH COMPLETE	
18		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)
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 PS / 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 'PS service 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 'PS service 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 'PS service 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		
1	SS			The following messages are sent and shall be received on cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3	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)
4	UE		Registration on CS	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
5	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
6	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1
7	<-		ATTACH ACCEPT	Routing area identity = RAI-1 Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature
8	<-		DETACH REQUEST	Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
9	->		DETACH ACCEPT	Detach type = re-attach required
10	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
11	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1
12	<-		ATTACH REJECT	Routing area identity = RAI-1 GMM cause = 'PS service not allowed in this PLMN'
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
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	->		ATTACH REQUEST	The following messages are sent and shall be received on cell B. Attach type = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
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, combined PS / 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.

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.

<END OF MODIFIED SECTION>

<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 'PS 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 'PS 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 "PS 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 "PS 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.

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 "PS 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = ' PS only attached' Mobile identity = P-TMSI-2 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 = 'PS 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.
16		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)
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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 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' P-TMSI-2 signature
28	<-	ROUTING AREA UPDATING ACCEPT	Routing area identity = RAI-9 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 "PS 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 PS / IMSI attach' Mobile identity = P-TMSI-1 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 PS/IMSI attached ' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
8	->		ATTACH COMPLETE	
9	<-		DETACH REQUEST	Detach Type = 're-attach not required' Cause = 'PS 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
14	<-		PAGING TYPE1	Mobile identity = IMSI 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 "PS 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 "PS 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 that 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.

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 acknowledges 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 acknowledges the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message.

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 "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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 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.
7		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)
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 signature Routing area identity = 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	Mobile identity = P-TMSI-1 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.

Step	Direction		Message	Comments
	UE	SS		
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' P-TMSI-1 signature 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' P-TMSI-1 signature Routing area identity = RAI-1
24		SS		The SS starts integrity protection.
25		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-3 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".

Step	Direction		Message	Comments
	UE	SS		
30	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS 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.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

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		
1		SS		The following messages are sent and shall be received on cell C. 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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3 Equivalent PLMNs = MCC2,MNC1
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. 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				
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = 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.
13		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)
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)

Step	Direction		Message	Comments
	UE	SS		
16a 17	UE UE			The UE performs cell selection. 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
18	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
20 21	-> UE		ATTACH COMPLETE	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, PS 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 = 'PS attach' Mobile identity = P-TMSI-2 Routing area identity = RAI-3
24a	<-		AUTHENTICATION AND CIPHERING REQUEST	
24b	->		AUTHENTICATION AND CIPHERING RESPONSE	
24c 25	SS <-		ATTACH ACCEPT	The SS starts integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Equivalent PLMNs = MCC1,MNC1
26	->		ATTACH COMPLETE	
27		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 D to the "Non-Suitable cell". (see note)
28 28a				Cell A is preferred by the UE. 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' P-TMSI-1 signature Routing area identity = RAI-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

Step	Direction		Message	Comments
	UE	SS		
31	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, PS detach'
32	->			
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. 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.
34	UE			
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		
1		SS		The following message are sent and shall be received on cell D. 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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 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' P-TMSI-1 signature Routing area identity = RAI-4 Mobile identity = P-TMSI-1
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
9	->		ROUTING AREA UPDATE REQUEST	The following message are sent and shall be received on cell B. Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4 Mobile identity = P-TMSI-1
10	<-		ROUTING AREA UPDATE ACCEPT	The UE shall initiate a location area updating procedure between steps 8 and 12. Update result = 'RA updated' Mobile identity = P-TMSI-2 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, PS 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 'PS service 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 'PS 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 that 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 'PS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS).
				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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached' Routing area identity = RAI-1 Equivalent PLMNs = MCC2,MNC1
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	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
				Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS 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).
12	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	Update type = 'PS attach' Mobile identity = IMSI
17a	<-		AUTHENTICATION AND CIPHERING REQUEST	
17b	->		AUTHENTICATION AND CIPHERING RESPONSE	
17c	SS			The SS starts integrity protection.

18	<-	ATTACH ACCEPT	Update result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Equivalent PLMNs = MCC1,MNC1
19 20	-> UE	ATTACH COMPLETE	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, PS 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.

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 'PS 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
7	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
8	SS			The SS verifies that the time between the attach and the periodic RA updating is T3312
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
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, PS 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 "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 = 'PS service 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 = 'PS service not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step8, UE shall,

- not initiate periodic routing area updating procedure.

At step9, UE shall;

- initiate the routing area updating procedure with the information elements specified in the above Expected Sequence.

At step10, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

- set the timer T3212 to its initial value and restart it.

At step11, UE shall,

- not initiate periodic routing area updating procedure.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

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 'PS 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		
1	UE			The following messages are sent and shall be received on cell A. 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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
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	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature 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 PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
16	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile 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, PS detach'
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 PS / 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 'PS 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 'PS 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 'PS service 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		
1	UE			The following messages are sent and shall be received on cell A. 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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = TMSI-1 Equivalent PLMNs = MCC2,MNC1
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	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-8
9	<-		ROUTING AREA UPDATE REJECT	GMM cause ='PS service 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)
14	->		ATTACH REQUEST	The following messages are sent and shall be received on cell C. Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
15	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile 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, PS 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.
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 PS / IMSI attached' to the equivalent cell.

<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, MCC1/MNC1/LAC1/RAC1](#) (Not HPLMN), cell B in [MCC2/MNC1/LAC1/RAC1 \(RAI-2, Not HPLMN\)](#) [MCC2/MNC1/LAC1/RAC1](#).

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		
1	UE			<p>The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS). 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) The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1</p> <p>The SS starts ciphering and integrity protection. No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'</p> <p>The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. Service type = "signalling" Reject cause = "PLMN not allowed"</p> <p>The UE stores the PLMN identity in the "forbidden PLMN list". The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. The SS verifies that the UE does not attempt to access the network. (SS wait 30second) Paging order is for PS service No response from the UE to the request. This is checked for 10 seconds.</p>
2	SS			
3	UE			
3a	SS			
4	->		ATTACH REQUEST	
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	
4c	SS			
5	<-		ATTACH ACCEPT	
6			Void	
7	UE			
8	->		SERVICE REQUEST	
9	<-		SERVICE REJECT	
10	UE			
11	UE			
12	SS			
13	<-		PAGING TYPE1	
14	UE			
15	SS			<p>The following messages shall be 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) Cell B is preferred by the UE. See TS 34.108 This is applicable only for UE in UE operation mode A. The UE initiates an attach automatically, by MMI or by AT command. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = IMSI</p>
16	UE			
16a	UE		Registration on CS	
17	UE			
17a	SS			
18	->		ATTACH REQUEST	
18a	<-		AUTHENTICATION AND CIPHERING REQUEST	

18b	->	AUTHENTICATION CIPHERING RESPONSE	AND	
18c	SS			The SS starts ciphering and integrity protection. Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'PS only attached'
19	<-	ATTACH ACCEPT		
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, PS 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 "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>

CR-Form-v7	
CHANGE REQUEST	
# 34.123-1 CR 761 # rev - #	Current version: 5.7.1 #

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 MAC testcase 7.1.2.3.1		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 20/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# In the specific message contents for System information block type 5, the IE "Available Sub Channel number" is set to '1111 1111 1111 1111'B. But the bit string size as per the 34.108 and ASN1 declaration is BITSTRING[12].
Summary of change:	# In the specific message contents for System information block type 5, the IE "Available Sub Channel number" is changed to '1111 1111 1111 1111'B instead of '1111 1111 1111 1111'B
Consequences if not approved:	# It would result in mis-match between 34.123-1 and 34.108

Clauses affected:	# 7.1.2.3.1.4												
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # 34.123-1 <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">X</td> <td style="width: 20px; text-align: center;">#</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> O&M Specifications	Y	N	#	X	X	#	#	X	#	X	#	X
Y	N												
#	X												
X	#												
#	X												
#	X												
#	X												
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.

7.1.2.3.1 Correct Selection of RACH parameters (FDD)

.....

7.1.2.3.1.4 Method of test

.....

[<Start of Changed Section>](#)

Specific Message Contents

The following deviations from System Information Block type 5 in TS 34.108 are applicable:

PRACH power offset info, PRACH info, and PRACH partitioning in System Information Block type 5

Information Element	Value/Remark
PRACH info	
- CHOICE	FDD
- Available Sub Channel number	'1111 1111 1111-1111'B
PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#0)
- Available signature End Index	7 (ASC#0)
- Assigned Sub-channel Number	'0001'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-channel Number	'0010'B
PRACH power offset	
- Preamble Retrans Max	5

[<End of Changed Section>](#)

7.1.2.3.1.5 Test requirements

.....

CHANGE REQUEST

34.123-1 CR 762 # rev **-** # Current version: **5.7.1**

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 MM testcase 9.4.2.1 to align with TTCN implementation.		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# At step 36 "CKSN"=CKSN2 is assigned. When the sequence is repeated for K=2 or K=3, at step 5 the UE will send the CKSN as CKSN2 and not CKSN1. As the Test Purpose is not to check the CKSN value we can safely ignore the checking of value. It is not implemented in the approved TTCN. Also to align the prose to existing implementation of TTCN.
Summary of change:	# In Initial Conditions removed the assignment of CKSN1 to CKSN. At step 5 in Test Sequence remove the check for CKSN value. At step 36 Comments are changed.
Consequences if not approved:	# The test may Fail a Conformant UE and Pass a Non Conformant UE.

Clauses affected:	# 9.4.2.1.4						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X	#	34.123-1
Y	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.

9.4.2.1 Location updating / rejected / IMSI invalid

9.4.2.1.1 Definition

9.4.2.1.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall:
 - 1.1 not perform normal location updating;
 - 1.2 not perform periodic location updating;
 - 1.3 not respond to paging with IMSI;
 - 1.4 not respond to paging with TMSI;
 - 1.5 reject any request from CM entity for MM connection other than for emergency call;
 - 1.6 not perform IMSI detach if it is switched off or has its power source removed.
- 2) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.1.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "IMSI unknown in HLR", "illegal MS" or "Illegal ME".

9.4.2.1.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas of the same PLMN;
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has valid TMSI(= TMSI1), CKSN(=~~CKSN1~~) and CK, IK. It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

USIM removal possible while the UE is powered Yes/No.

Switch off on button Yes/No.

Support for speech Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "IMSI unknown in HLR". The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE and the substate NO IMSI, i.e. does not perform normal location updating when a new cell of the same or another PLMN is entered, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls, does not perform IMSI detach if it is switched off or has its power source removed and deletes the stored LAI, CKSN and TMSI.

The test is repeated with cause value "Illegal MS" and with cause value "Illegal ME".

Expected sequence

The sequence is executed for execution counter k = 1, 2, 3.

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell B. 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 is set to "Registration".
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1 , "LAI" = a, "Mobile Identity" = TMSI1
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "IMSI unknown in HLR" for k = 1, "Illegal MS" for k = 2, "Illegal ME" for k = 3.
7		SS		The SS releases the RRC Connection.
8			Void	
9		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)
10		UE		The UE performs cell reselection according to procedure as specified in (this however is not checked until step 23). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		SS		The SS waits at least 7 minutes for a possible periodic updating.
12		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
13	←		PAGING TYPE 1	The UE is paged in cell A. "UE identity" IE contains IMSI. Paging Cause: Terminating Conversational Call.
14		UE		The UE shall ignore this message. This is verified during 3 s.
15	←		PAGING TYPE 1	The UE is paged in cell A. "UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
16		UE		The UE shall ignore this message. This is verified during 3 s.
17		UE		A MO CM connection is attempted.
18		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
19		UE		If the UE supports speech (see ICS), it is made to perform an emergency call.
20		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Emergency call".
This message is sent in cell A.				
21			Void	
22			Void	
23	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. "Mobile identity": type of identity is set to IMEI.
24	←		CM SERVICE ACCEPT	
25	→		EMERGENCY SETUP	
26	←		RELEASE COMPLETE	"Cause" = unassigned number.
27		SS		The SS releases the RRC connection.
28			Void	
29		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
30	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
31	UE			Depending on what has been performed in step 29 the UE is brought back to operation.
32	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration".
33			Void	
34			Void	
35		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
36		←	AUTHENTICATION REQUEST	"CKSN" = CKSN2 Assign a CKSN
37		→	AUTHENTICATION RESPONSE	
37a	SS			The SS starts integrity protection.
38		←	LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
39		→	TMSI REALLOCATION COMPLETE	
40	SS			The SS releases the RRC connection.
41			Void	
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.

9.4.2.1.5 Test requirement

- 1) 1.1 At step 10 the UE shall not perform normal location updating.
- 1.2 At step 12 the UE shall not perform periodic location updating.
- 1.3 At step 14 the UE shall not respond to paging with IMSI.
- 1.4 At step 16 the UE shall not respond to paging with TMSI.
- 1.5 At step 18 the UE shall reject a MO CM connection.
- 1.6 At step 30 the UE shall not initiate an RRC connection establishment on cell A or on cell B.
- 2) At step 20 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".
- 3) At step 35 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the LAI IE set to "deleted LAI" on cell A.

CR-Form-v7	
CHANGE REQUEST	
⌘ 34.123-1 CR 763 ⌘ rev - ⌘ Current version: 5.7.1 ⌘	

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 MM testcase 9.4.4		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 16/04/2004
Category:	⌘ D	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 refers to step 10 which is Void, instead of referring to step 8.
Summary of change:	⌘ 1. Change the Test Requirement to refer to step 8 instead of step 10. 2. Remove the comments for step 10 in the Expected Sequence.
Consequences if not approved:	⌘ Test Requirement refers to Void step in Test Sequence.

Clauses affected:	⌘ 9.4.4.4 and 9.4.4.5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	34.123-1
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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.
- 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.

9.4.4 Location updating / release / expiry of T3240

9.4.4.1 Definition

9.4.4.2 Conformance requirement

The UE receiving a LOCATION UPDATING ACCEPT message shall start T3240: it shall abort the RR connection at the expiry of timer T3240.

References

TS 24.008 clauses 4.4.4.8 and 11.2.

9.4.4.3 Test purpose

To verify that the UE aborts the RR-connection at the expiry of timer T3240.

9.4.4.4 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

A normal location updating procedure is performed. The RR-connection is not released by the SS within the timer T3240. It is checked that the UE aborts the RR-connection.

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 1)
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
5a		SS		The SS starts integrity protection.
6	←		LOCATION UPDATING ACCEPT	
7		SS		The SS waits T3240 expiry.
8	→		SIGNALLING CONNECTION RELEASE INDICATION	The UE shall abort the RR connection. (see note 2)
9		SS		CN domain identity = CS domain The SS releases the RRC connection.
10			Void	Send only if RRC Connection Release is send.
NOTE1: 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".				
NOTE2: At the expiration of T3240, as per TS 24.008, RR connection shall be aborted. In UMTS, UE cannot release RRC connection on its own. Instead, UE can abort the RR connection ("CS signalling connection") and send a Signalling Connection Release Indication to the UTRAN, in order to initiate the release of RRC connection.				

Specific message contents

None.

9.4.4.5 Test requirement

At step ~~10~~ the UE shall abort the RRC connection.

CHANGE REQUEST

34.123-1 CR 764 # rev **-** # Current version: **5.7.1**

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:	# 'Emergency call establishment' as one of the CM Service Type in 10.1.2.1.1		
Source:	# Sasken Communication Technologies Limited, MCC Task 160		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# 1. As per 3GPP TS 24.008 section 4.5.1.1 MM connection establishment initiated by the mobile station: "The CM SERVICE REQUEST message contains the: - mobile identity according to clause 10.5.1.4; - mobile station classmark 2; - ciphering key sequence number; and - CM service type identifying the requested type of transaction (e.g. mobile originating call establishment, emergency call establishment, short message service, supplementary service activation, location services)" Thus a mobile will send CM Service Type as "Emergency" if a emergency call is initiated, which is one of the mobile originated circuit switched basic service. 2. Alignment of Prose to TTCN.
Summary of change:	# 1. In the Test Purpose and Test Requirements added CM Service Type as "emergency".
Consequences if not approved:	# Mobile which is as per the test case Initial condition and supports only Emergency Call can not be tested. Test procedure will not be consistent with the core specs.

Clauses affected:	# 10.1.2.1.1.3,10.1.2.1.1.5						
Other specs affected:	# <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">#</td> </tr> </table> Other core specifications # 34.123-1	Y	N	#	X	X	#
Y	N						
#	X						
X	#						

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.

10.1.2.1.1 Outgoing call / U0 null state / MM connection requested

10.1.2.1.1.1 Definition

The call control entity of the User Equipment requests the MM-sublayer to establish a mobile originating MM-connection.

10.1.2.1.1.2 Conformance requirement

If no RR connection exists, the MM sublayer requests the RR sublayer to establish an RR connection and enters MM sublayer state WAIT FOR RR CONNECTION (MM CONNECTION). This request contains an establishment cause and a CM SERVICE REQUEST message.

References

TS 24.008 clause 5.2.1.1 and clause 4.5.1.1

10.1.2.1.1.3 Test purpose

To verify that upon initiation of an outgoing basic call by user the UE initiates establishment of an MM connection, using as first MM message a CM SERVICE REQUEST message with CM service type "Mobile originating call establishment or packet mode connection establishment" or "[Emergency call establishment](#)".

10.1.2.1.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. When the SS receives CM SERVICE REQUEST, the contents of it shall be checked.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		->		UE initiates outgoing call
2			Void	
3			Void	
4		->	CM SERVICE REQUEST	
5		<-		
				SS shall verify the CM service type requested by the UE
				The SS releases the RRC connection.

Specific message contents:

None.

10.1.2.1.1.5 Test requirements

After step 3 the UE shall initiate establishment of an MM connection, using as first MM message a CM SERVICE REQUEST message with CM service type "Mobile originating call establishment or packet mode connection establishment" [or "Emergency call establishment"](#).

CHANGE REQUEST

⌘ **34.123-1 CR 765** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 test case 8.1.2.9 for BCCH Modification Time in Paging Type 1 message		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI Date: ⌘ 19/04/2004		
Category:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> ⌘ F Use <u>one</u> 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. </td> <td style="width: 50%; vertical-align: top;"> Release: ⌘ Rel-5 Use <u>one</u> 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) </td> </tr> </table>	⌘ F Use <u>one</u> 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 .	Release: ⌘ Rel-5 Use <u>one</u> 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)
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Reason for change: ⌘	<p>1) This test case uses the BCCH modification time in a way that cannot be implemented with the API used by the TTCN in TS 34.123-3. Neither the procedure described in the prose, nor the current TTCN implementation actually test correct handling of BCCH Modification Time in the UE and the test purposes do not require BCCH modification time to be tested.</p> <p>(Note: This CR is line with the T1-22 Approved CR T1-040268)</p> <p>2) Need to mention the specific message contents for PAGING TYPE 1.</p> <p>3) Step number is wrong for SYSTEM INFORMATION BLOCK TYPE 1 in Specific message contents.</p>
Summary of change: ⌘	<p>1) Use an alternative procedure not using BCCH-Modification time:</p> <ul style="list-style-type: none"> - Send paging indicating new MIB value tag - Wait for 5s (still transmitting old SIBs) - Send new SIBs - Wait for 5s – allow time to read new SIBs - Continue as in existing test <p>2) Mentioned the specific message contents for PAGING TYPE 1.</p> <p>3) Step no. 1a is changed to 0a for SYSTEM INFORMATION BLOCK TYPE 1 in specific message contents.</p>

Consequences if not approved:	⌘ It may not be possible to produce TTCN test cases consistent with the prose. If it is possible then there would be a significant delay before test case sequences.

Clauses affected:	⌘ 8.1.2.9.4												
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> <td></td> </tr> <tr> <td></td> <td>X</td> <td>Other core specifications</td> </tr> <tr> <td>X</td> <td></td> <td>Test specifications</td> </tr> <tr> <td></td> <td>X</td> <td>O&M Specifications</td> </tr> </table>	Y	N			X	Other core specifications	X		Test specifications		X	O&M Specifications
Y	N												
	X	Other core specifications											
X		Test specifications											
	X	O&M Specifications											
Other comments:	⌘ 34.123-1												

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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.

8.1.2.9 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

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. Also the modification time is set to 2048 radio frames from the current SFN. 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)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u>	<u>Not Present</u>
<u>Paging record list</u>	<u>Not Present</u>
<u>BCCH modification info</u>	<u>Set to (Current MIB value tag + 1)</u>
- MIB Value Tag	<u>Not Present</u>
- BCCH Modification time	<u>Not Present</u>

SYSTEM INFORMATION TYPE 1 (Step 4a0a)

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:

<u>Information Element</u>	<u>Value/remark</u>
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

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
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

CHANGE REQUEST

34.123-1 CR 766 # rev **-** # Current version: **5.7.1**

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 for RRC Transaction Identifier in test cases 8.1.5.1 and 8.1.5.4		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	# In these test cases at Step 2 and Step 9 of the expected sequence UE Capability Enquiry and UE Capability Information Confirm messages containing an unexpected critical message extension are sent.
	As per 3GPP TS 25.331 section 9.3b Unexpected critical message extension:
	"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 clause 8."
	Section 8.1.7.4 Invalid UE CAPABILITY ENQUIRY message
	If the UE receives a UE CAPABILITY ENQUIRY message, which contains a

protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY ENQUIRY; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

....

Section 8.1.6.5 Invalid UE CAPABILITY INFORMATION CONFIRM message

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to `TRUE` according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> stop timer T304;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

....

Thus based on the above section references, in RRC STATUS message sent by UE at Step 3 and 10, Transaction identifier should be set to 0 for 8.1.5.1 and 8.1.5.4 test cases.

Summary of change: ⌘ 1. Updated the References from 8.1.7.9.3b to 8.1.7 and 9.3b
 2. In the message specific content for RRC STATUS message at Step 3 and 10 changed RRC transaction identifier to 0 for 8.1.5.1 and 8.1.5.4 test cases.

Consequences if not approved: ⌘ Test procedure is not consistent with the core specs.
 Test case may pass a non conformant UE.

Clauses affected: ⌘ 8.1.5.1.2, 8.1.5.1.4, 8.1.5.4.2, 8.1.5.4.4

Other specs Affected:	⌘	<input type="checkbox"/> Y	<input type="checkbox"/> N	Other core specifications	⌘	34.123-1
		<input checked="" type="checkbox"/> X	<input type="checkbox"/>			
		<input checked="" type="checkbox"/> X	<input type="checkbox"/>			
		<input type="checkbox"/>	<input checked="" type="checkbox"/> 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.

8.1.5.1 UE Capability in CELL_DCH state: Success

8.1.5.1.1 Definition

8.1.5.1.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

...

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and
- 1> include this in IE "UE system specific capability".

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

- 1> stop timer T304;

...

- 1> and the procedure ends.

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> stop timer T304;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION;

- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
- 2> restart timer T304 and continue with any ongoing procedures or processes as if the invalid UE CAPABILITY INFORMATION CONFIRM message has not been received.

...

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 clauses 8.1.6 ~~and~~, 8.1.7, ~~and~~ 9.3b.

8.1.5.1.3 Test purpose

1. To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS.
2. To confirm that the UE indicates an invalid message reception when invalid UE CAPABILITY ENQUIRY and UE CAPABILITY INFORMATION CONFIRM messages are received. The UE shall transmit RRC STATUS message with the correct error cause value to SS.

8.1.5.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_DCH state (state 6-9 or 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

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. The SS transmits a UE CAPABILITY ENQUIRY message containing an unexpected critical message extension. After receiving such a message, the UE shall report the error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a correct UE CAPABILITY ENQUIRY message, the UE receives this message and transmits a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the requested capabilities. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure.

Then SS initiates another UE capability enquiry procedure. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmits a UE CAPABILITY INFORMATION CONFIRM message containing an unexpected critical message extension. The UE shall detect an error and send an RRC STATUS message to report this event. After submitting this message to lower layers for transmission, the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH after the expiry of restarted T304. SS then transmits an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

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		←	UE CAPABILITY ENQUIRY	See specific message contents for this message
3		→	RRC STATUS	See specific message contents for this message
4		←	UE CAPABILITY ENQUIRY	See specific message contents for this message.
5		→	UE CAPABILITY INFORMATION	See specific message contents for this message.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
7		←	UE CAPABILITY ENQUIRY	Same as in step 4.
8		→	UE CAPABILITY INFORMATION	Shall be the same message content as in step 5.
9		←	UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message
10		→	RRC STATUS	UE shall detect an error and then transmit this message.
11		→	UE CAPABILITY INFORMATION	UE shall re-transmit this message after the restarted T304 expires.
12		←	UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator":

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 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.
Critical extensions	'FF'H

RRC STATUS (Step 3)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Enquiry Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Enquiry Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

UE CAPABILITY ENQUIRY (Steps 4) (FDD)

Use the UE CAPABILITY ENQUIRY message as defined in [9] (TS 34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access FDD capability update requirement	TRUE
- UE radio access TDD capability update requirement	FALSE
- System specific capability update requirement list	Gsm

UE CAPABILITY ENQUIRY (Steps 4) (TDD)

Use the UE CAPABILITY ENQUIRY message as defined in [9] (TS 34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access FDD capability update requirement	FALSE
- UE radio access TDD capability update requirement	TRUE
- System specific capability update requirement list	Gsm

UE CAPABILITY INFORMATION (Step 5)

Check to see if the same message type found in [9] (TS 34.108) Clause 9 is received, with the following exceptions:

Information Element	Value/remark
UE system specific capability	Presence and value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings

UE CAPABILITY INFORMATION CONFIRM (Step 9)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator". Use the UE CAPABILITY INFORMATION CONFIRM message as defined in [9] (TS 34.108) Clause 9, with the following addition:

Information Element	Value/remark
Critical extensions	'FF'H

RRC STATUS (Step 10)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Information Confirm Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY INFORMATION CONFIRM message.
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

8.1.5.1.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to "Message extension not comprehended" correct transaction identifier.

After step 4 and 7 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the UE CAPABILITY ENQUIRY message with correct contents.

After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "Message extension not comprehended" and the transaction identifier set to the same value as used in the UE CAPABILITY ENQUIRY message of step 7.

After step 10, the UE shall re-transmit the UE CAPABILITY INFORMATION message with a similar content as in step 8 after the expiry of restarted T304.

.....

8.1.5.4.1 Definition

8.1.5.4.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

...

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and
- 1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;
- 1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and

1> include this in IE "UE system specific capability".

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

1> stop timer T304;

...

1> and the procedure ends.

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable `PROTOCOL_ERROR_REJECT` to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

1> stop timer T304;

1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;

1> include the IE "Identification of received message"; and

1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and

1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable `TRANSACTIONS`; and

1> clear that entry;

1> include the IE "Protocol error information" with contents set to the value of the variable `PROTOCOL_ERROR_INFORMATION`;

1> when the RRC STATUS message has been submitted to lower layers for transmission:

2> restart timer T304 and continue with any ongoing procedures or processes as if the invalid UE CAPABILITY INFORMATION CONFIRM message has not been received.

...

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 clauses 8.1.6, ~~and~~ 8.1.7, ~~and~~ 9.3b.

8.1.5.4.3 Test purpose

1. To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS.
2. To confirm that the UE indicates an invalid message reception when invalid UE CAPABILITY ENQUIRY and UE CAPABILITY INFORMATION CONFIRM messages are received. The UE shall transmit RRC STATUS message with the correct error cause value to SS.

8.1.5.4.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_FACH state (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to the CELL_FACH state after a successful outgoing call attempt. The SS transmits a UE CAPABILITY ENQUIRY message containing an unexpected critical message extension. After receiving such a message, the UE shall report an error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a UE CAPABILITY ENQUIRY message which includes the IE "Capability update requirement". After UE receives this message, it transmits a UE CAPABILITY INFORMATION message on the uplink DCCH, which includes the requested capabilities. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure.

Then SS initiates another UE capability enquiry procedure. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmits a UE CAPABILITY INFORMATION CONFIRM message containing an unexpected critical message extension. The UE shall detect an error and send an RRC STATUS message to report this event. After submitting this message to lower layers for transmission, the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH upon the expiry of restarted T304. SS completes this test by sending an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state after an outgoing call has been established successfully.
2		←	UE CAPABILITY ENQUIRY	See specific message contents for this message
3		→	RRC STATUS	See specific message contents for this message.
4		←	UE CAPABILITY ENQUIRY	Use default message.
5		→	UE CAPABILITY INFORMATION	Use default message.
6		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
7		←	UE CAPABILITY ENQUIRY	Same as in step 4.
8		→	UE CAPABILITY INFORMATION	The message content shall be the same as in step 5.
9		←	UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message
10		→	RRC STATUS	UE shall detect an error and then transmit this message on uplink DCCH.
11		→	UE CAPABILITY INFORMATION	UE shall re-transmit this message after the restarted T304 expires.
12		←	UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2)

Use the UE CAPABILITY ENQUIRY message as defined in [9] (TS 34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 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.
Critical extensions	'FF'H

RRC STATUS (Step 3)

Check to is the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message	
- Received message type	UE Capability Enquiry
RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message_0
Protocol Error Information	
- Protocol Error Cause	Message extension not comprehended

UE CAPABILITY INFORMATION CONFIRM (Step 9)

SS sends a message containing a critical extension not defined for the protocol release supported by the UE, as indicated in the IE "Access stratum release indicator". Use the UE CAPABILITY INFORMATION CONFIRM message as defined in [9] (TS 34.108) Clause 9, with the following addition:

Information Element	Value/remark
Critical extensions	'FF'H

RRC STATUS (Step 10)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
Identification of received message - Received message type - RRC transaction identifier	UE Capability Information Confirm Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY INFORMATION CONFIRM message_0
Protocol Error Information - Protocol Error Cause	Message extension not comprehended

8.1.5.4.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to "Message extension not comprehended" correct transaction identifier.

After step 4 and 7 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the downlink UE CAPABILITY ENQUIRY message with correct contents.

After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "Message extension not comprehended" and the transaction identifier set to the same value as used in the UE CAPABILITY ENQUIRY message of step 7.

After step 10, the UE shall re-transmit the UE CAPABILITY INFORMATION message with a similar content as in step 8 upon the expiry of restarted T304

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 767 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 corrections for 8.3.1.1		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI Date: ⌘ 21/04/2004		
Category:	⌘ D Release: ⌘ Rel-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%;"> Use <u>one</u> 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) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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)
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Reason for change:	⌘ In Expected sequences of 8.3.1.1, 1) At Step 12a, 13, the direction of message is wrong. 2) At Step 14, the direction of message is missing.
Summary of change:	⌘ 1) Changed the direction of message from UE to SS at step 12a and at step 13 made from SS to UE. 2) At Step 14, made the direction of message from UE to SS.
Consequences if not approved:	⌘ There will be a conflict between the Test case procedure and expected Sequences.

Clauses affected:	⌘ 8.3.1.1.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.123-1
	Y	N									
		X									
X											
	X										
	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.

8.3.1 Cell Update

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.

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 transmit 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 PHYSICAL 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

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	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'.
Cell Update Cause	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	'0000 0000 0001' An arbitrary 20-bits string which is different from original S-RNTI
New C-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 <i>channel requirement</i> 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)
<i>CHOICE channel requirement</i>	
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	'1010 1010 1010 1010'
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB Information Release List	Not Present
- RB Information Reconfiguration List	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

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 768 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 prose for test cases 8.1.1.4, 8.1.1.5 and 8.1.1.6		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI Date: ⌘ 12/02/2004		
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%;"> Use <u>one</u> 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) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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)
F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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 BCCH Modification time is not present in paging type 1 message, that is reason to remove the BCCH Modification time at comment column.
Summary of change:	⌘ In the comment column, removed the sentence "At the SFN indicated by the BCCH modification time" at Step 3 in all the three cases.
Consequences if not approved:	⌘ It may not be possible to implement TTCN consistent with prose because of wrong reference.

Clauses affected:	⌘ 8.1.1.4.4, 8.1.1.5.4, 8.1.1.6.4									
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	X	X	⌘ 34.123-1
Y	N									
X	X									
X	X									
X	X									
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.

8.1.1.4 Paging for notification of BCCH modification in idle mode

8.1.1.4.1 Definition

8.1.1.4.2 Conformance requirement

A UE in idle mode state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in TS 25.304 and depend on the IE "CN domain specific DRX cycle length coefficient".

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

...

If the IE "BCCH modification info" is included, any UE in idle mode state shall perform the actions as specified in TS 25.331 subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message.

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE_TAG.
- 1> if the value tags differ:
 - 2> read the master information block on BCH;
 - 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE_TAG:
 - 3> perform actions as specified in TS 25.331 subclause 8.1.1.5.

...

Upon reception of the master information block, the UE shall:

- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE_TAG;
- 1> if the value tags differ:
 - 2> store the value tag into the variable VALUE_TAG for the master information block;
 - 2> read and store scheduling information included in the master information block.

....

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:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:
 - 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE_TAG for that system information block;
 - 2> if the value tags differ:
 - 3> store the value tag read in scheduling information for that system information block into the variable VALUE_TAG;
 - 3> read and store the IEs of that system information block.

...

Reference

3GPP TS 25.331 clause 8.1.1, 8.1.2.

8.1.1.4.3 Test purpose

To confirm that the UE checks the new value tag of the master information block and reads the updated SYSTEM INFORMATION BLOCK messages after it receives a PAGING TYPE 1 message which includes the IE "BCCH Modification Information".

8.1.1.4.4 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 with a CN UE identity, depending on the CN domain(s) supported by the UE.

Test Procedure

The SS transmits a PAGING TYPE 1 message. This message addresses the UE using its (P)TMSI and the "paging cause" IE set to a terminating call type that is supported by the UE. The UE shall respond with RRC CONNECTION REQUEST message. Then SS shall transmit RRC CONNECTION REJECT message to UE.

The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The message shall include the IE "BCCH Modification Information" indicating the value tag of the modified master information block. For a time SS continuously broadcasts the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 5 message. In the new SIB TYPE 5 message, the IE "Available Signature" is different when compared to the original SIB TYPE 5 message.

At the paging occasion, SS transmits a new PAGING TYPE 1 message. This message addresses the UE using its (P)TMSI and the "paging cause" IE set to a terminating call type that is supported by the UE. The UE shall respond with RRC CONNECTION REQUEST message. Then SS shall transmit RRC CONNECTION REJECT message to UE.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	SS starts to transmit this message on the PCCH at the correct paging occasion.
1a		→	RRC CONNECTION REQUEST	
1b		←	RRC CONNECTION REJECT	
2		←	PAGING TYPE 1	SS transmits the message including the IE "BCCH Modification Information", with the "Value Tag" changed from the "MIB Value Tag" of the current Master Information Block. SS continues to broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH.
2a				SS waits 5s (to ensure that the UE waits for the new value tag before re-reading system information)
3		←	MASTER INFORMATION BLOCK	<p>At the SFN indicated by the BCCH modification time, SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.</p> <p>At the same time, SS starts to transmit the affected SIB TYPE 5 messages continuously. The IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)".</p>
		←	SYSTEM INFORMATION BLOCK TYPE 5	
3a				SS waits 5s (to ensure that the UE has time to read the new system information)
4		←	PAGING TYPE 1	SS starts to transmit this message continuously on the PCCH at the correct paging occasion.
5			RRC CONNECTION REQUEST	
6		←	RRC CONNECTION REJECT	

Specific Message Contents

PAGING TYPE 1 (Step 1 and 4)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	CN identity Terminating Call with one of the supported services Supported Domain (PS Domain or CS Domain) Local (P)TMSI Same as registered TMSI or P-TMSI
- CHOICE Used paging identity	
- Paging Cause	
- CN Domain Identity	
- CHOICE UE Identity	
- Routing parameter	Not Present
BCCH modification info	

RRC CONNECTION REJECT (Step 1b)

Use the same message type found in [9] TS 34.108 clause 9.

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Not Present
Paging record list	
BCCH modification info	Set to (Current MIB value tag + 1)
MIB Value Tag	
BCCH Modification time	
	Not Present

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	As in PAGING TYPE 1 in step 2

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	FDD '1111 1111 0000 0000'B
- PRACH info	
- CHOICE mode	
- Available Signature	

RRC CONNECTION REJECT

Use the same message type found in TS 34.108, clause 9.

8.1.1.4.5 Test requirement

After step 1 the UE shall transmit RRC CONNECTION REQUEST messages in response to the PAGING TYPE 1 messages sent in step 1, using an allowed signature according to original IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

After step 4 the UE shall transmit RRC CONNECTION REQUEST messages in response to the PAGING TYPE 1 messages sent in step 4, using an allowed signature according to modified IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5

8.1.1.5 Paging for notification of BCCH modification in connected mode (CELL_PCH)

8.1.1.5.1 Definition

8.1.1.5.2 Conformance requirement

A UE in CELL_PCH state shall receive the paging information for all its monitored paging occasions. For a UE in CELL_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in TS 25.331 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 IE "BCCH modification info" is included, any UE in CELL_PCH state shall perform the actions as specified in TS 25.331 subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message.

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE_TAG.
- 1> if the value tags differ:
 - 2> read the master information block on BCH;
 - 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE_TAG:
 - 3> perform actions as specified in TS 25.331 subclause 8.1.1.5.

...

Upon reception of the master information block, the UE shall:

- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE_TAG;
- 1> if the value tags differ:
 - 2> store the value tag into the variable VALUE_TAG for the master information block;
 - 2> read and store scheduling information included in the master information block.

....

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:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:
 - 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE_TAG for that system information block;
 - 2> if the value tags differ:
 - 3> store the value tag read in scheduling information for that system information block into the variable VALUE_TAG;
 - 3> read and store the IEs of that system information block.

...

Reference

3GPP TS 25.331 clause 8.1.1, 8.1.2.

8.1.1.5.3 Test purpose

To confirm that the UE, in addition to any actions caused by the IE "Paging record" occurrences in the PAGING TYPE 1 message, checks the new value tag of the master information block, and read the SYSTEM INFORMATION messages after it receives a PAGING TYPE 1 message which includes the IE "BCCH Modification Information".

8.1.1.5.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_PCH state (state 6-12) as specified in clause 7.4 of TS 34.108 with valid a U-RNTI assigned to it.

Test Procedure

The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The PAGING TYPE 1 message shall include the IE "BCCH Modification Information" indicating value tag of the modified master information block. For a time, SS continuously broadcasts the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 5 message. In the new SIB TYPE 5 message, the IE "Available Signature" for FDD, "Available Channelisation codes indices" for TDD 3.84 Mcps option or "Available SYNC_UL codes indices" for TDD 1.28 Mcps option is different when compared to the original SIB TYPE 5 message. At the paging occasion, SS transmits a new PAGING TYPE 1 message. This message addresses the UE using its U-RNTI. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The SS shall transmit a CELL UPDATE CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" changed 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.
2a				SS waits 5s (to ensure that the UE waits for the new value tag before re-reading system information)
3		←	MASTER INFORMATION BLOCK	<p>At the SFN indicated by the BCCH modification time, SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.</p> <p>For FDD, at the same time, SS starts to transmit the affected SIB TYPE 5 continuously. The value of IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)".</p> <p>For TDD 3.84 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available Channelisation codes indices " is changed according to test purposes.</p> <p>For TDD 1.28 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available SYNC_UL codes indices " is changed according to test purposes.</p>
		←	SYSTEM INFORMATION BLOCK TYPE 5	
3a				SS waits 5s (to ensure that the UE has time to read the new system information)
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH at the correct paging occasion.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	See message content.

Specific Message Contents

PAGING TYPE 1 (Step 2)

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

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	As in PAGING TYPE 1 in step 2

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3)(FDD)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	
- PRACH info	
- CHOICE mode	FDD
- Available Signature	'1111 1111 0000 0000'B

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) (TDD 3.84 Mcps option)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	
- PRACH info	
- CHOICE mode	TDD
- CHOICE <i>TDD option</i>	3.84 Mcps option
- Available Channelisation codes indices	To be defined (each bit indicates availability of a channelisation code index)

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) (TDD 1.28 Mcps option)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	
- PRACH info	
- CHOICE mode	TDD
- CHOICE <i>TDD option</i>	1.28 Mcps option
- Available SYNC_UL codes indices	To be defined (each bit indicates availability of a SYNC_UL code index)

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 5)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
U-RNTI	Checked to see if it is set to the same values as in step 4
- SRNC identity	
- S-RNTI	
Cell update cause	Paging response

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in (TS 34.108) Clause 9., with the following exception:

Information Element	Value/remark
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.1.1.5.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to modified IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

8.1.1.6 Paging for notification of BCCH modification in connected mode (URA_PCH)

8.1.1.6.1 Definition

8.1.1.6.2 Conformance requirement

A UE in URA_PCH state shall receive the paging information for all its monitored paging occasions. For a UE in 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 TS 25.331 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 IE "BCCH modification info" is included, any UE in URA_PCH state shall perform the actions as specified in TS 25.331 subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message as specified above.

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE_TAG.
- 1> if the value tags differ:
 - 2> read the master information block on BCH;
 - 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE_TAG:
 - 3> perform actions as specified in subclause 8.1.1.5.

...

Upon reception of the master information block, the UE shall:

- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE_TAG;
- 1> if the value tags differ:
 - 2> store the value tag into the variable VALUE_TAG for the master information block;
 - 2> read and store scheduling information included in the master information block.

....

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:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:
 - 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE_TAG for that system information block;
 - 2> if the value tags differ:
 - 3> store the value tag read in scheduling information for that system information block into the variable VALUE_TAG;
 - 3> read and store the IEs of that system information block.

...

Reference

3GPP TS 25.331 clause 8.1.1, 8.1.2.

8.1.1.6.3 Test purpose

To confirm that the UE checks the included new value tag of the master information block and reads the relevant SYSTEM INFORMATION block(s) after it receives a PAGING TYPE 1 message which includes the IE "BCCH Modification Information".

8.1.1.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH state (state 6-13) as specified in clause 7.4 of TS 34.108 with a valid U-RNTI assigned.

Test Procedure

The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The message shall include the IE "BCCH Modification Information" indicating the value tag of the master information block. For a time, SS continuously broadcasts the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 5 message. In the new SIB TYPE 5 message, the IE "Available Signature" for FDD, "Available Channelisation codes indices" for TDD 3.84 Mcps option or "Available SYNC_UL codes indices" for TDD 1.28 Mcps option is different when compared to the original SIB TYPE 5 message. At the next paging occasion, SS transmits a new PAGING TYPE 1 message. This message addresses the UE using its U-RNTI and the "paging cause" IE set to a terminating call type that is supported by the UE. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The SS shall transmit a CELL UPDATE CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" changed 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.
2a				SS waits 5s (to ensure that the UE waits for the new value tag before re-reading system information)
3		←	MASTER INFORMATION BLOCK	<p>At the SFN indicated by the BCCH modification time, SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.</p> <p>For FDD, at the same time, SS starts to transmit the affected SIB TYPE 5 message continuously. The value of IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)".</p> <p>For TDD 3.84 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available Channelisation codes indices " is changed according to test purposes.</p> <p>For TDD 1.28 Mcps option, at the same time, SS starts to transmit the affected SIB TYPE 6 continuously. The value of IE "Available SYNC_UL codes indices " is changed according to test purposes.</p>
		←	SYSTEM INFORMATION BLOCK TYPE 5	
3a				SS waits 5s (to ensure that the UE has time to read the new system information)
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH at the correct occasion.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	See message content.

Specific Message Contents

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Not Present
Paging record list	
BCCH modification info	Set to (Current MIB value tag + 1)
- MIB Value Tag	
- BCCH Modification time	

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	As in PAGING TYPE 1 in step 2

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	FDD '1111 1111 0000 0000'B
- PRACH info	
- CHOICE mode	
- Available Signature	

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) (TDD 3.84 Mcps option)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	TDD 3.84 Mcps option To be defined (each bit indicates availability of a channelisation code index)
- PRACH info	
- CHOICE mode	
- CHOICE <i>TDD option</i>	
- Available Channelisation codes indices	

SYSTEM INFORMATION BLOCK TYPE 5 (Step 3) (TDD 1.28 Mcps option)

Use the same message type found in clause 6.1 of TS 34.108, with the following exception.

Information Element	Value/remark
- PRACH system information	TDD 1.28 Mcps option To be defined (each bit indicates availability of a SYNC_UL code index)
- PRACH info	
- CHOICE mode	
- CHOICE <i>TDD option</i>	
- Available SYNC_UL codes indices	

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 5)

Check to see if the same message type found in TS 34.108, clause 9 is received, with the following exceptions:

Information Element	Value/remark
U-RNTI	Checked to see if it is set to the same values as in step 4
- SRNC identity	
- S-RNTI	
Cell update cause	Paging response

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in TS 34.108, clause 9 with the following exceptions.

Information Element	Value/Remarks
RRC State indicator	URA_PCH
UTRAN DRX cycle length coefficient	3

8.1.1.6.5 Test requirement

After step 4, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to modified IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 5.

CHANGE REQUEST

⌘ **34.123-1 CR 769** ⌘ rev - ⌘ Current version: **5.7.1** ⌘

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 for 14.2.11, 14.2.39.2		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 22/04/04
Category:	⌘ D	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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 in subtest table incorrect for 14.2.11.3, 14.2.39.2.3		
Summary of change:	⌘ Added reference note for Restricted UL TFCLs in clauses 14.2.11.3, 14.2.39.2.3		
Consequences if not approved:	⌘ There will be a conflict in reference notes.		

Clauses affected:	⌘ 14.2.11.3, 14.2.39.2.3										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘ 34.123-1
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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

14.2.11 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

14.2.11.1 Conformance requirement

See clause 14.2.4.1.

14.2.11.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.11.

14.2.11.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x49	0x53	0x148
	TF1, bits	1x39	1x53	1x148
	TF2, bits	1x42	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0)
UL_TFC3	(TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	1x0	0x53	0x148
	TF1, bits	1x39	1x53	1x148
	TF2, bits	1x42	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0)
DL_TFC3	(TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCIs (note1)	UL RLC SDU size (note2)	Test data size (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 53 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5,	RB5: 42 bits RB6: 53 bits	RB5: 42 bits RB6: 53 bits

NOTE1: UL_TFC0, UL_TFC1, UL_TFC2 and UL_TFC3 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.

See clause 14.1.1 for test procedure.

14.2.11.4 Test requirements

See clause 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x42) and RB6/TF1 (1x53).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

.....

14.2.39.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB / (TC, 20 ms TTI)

14.2.39.2.1 Conformance requirement

See 14.2.4.1.

14.2.39.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.39 for the uplink turbo channel coding and 20 ms TTI case.

14.2.39.2.3 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 (32 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

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, TF0, TF1)
UL_TFC10	(TF1, TF0, TF0, TF0, TF1)
UL_TFC11	(TF2, TF1, TF1, TF0, TF1)
UL_TFC12	(TF0, TF0, TF0, TF1, TF1)
UL_TFC13	(TF1, TF0, TF0, TF1, TF1)
UL_TFC14	(TF2, TF1, TF1, TF1, TF1)
UL_TFC15	(TF0, TF0, TF0, TF2, TF1)
UL_TFC16	(TF1, TF0, TF0, TF2, TF1)
UL_TFC17	(TF2, TF1, TF1, TF2, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC16	UL_TFC1, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC18	UL_TFC3, UL_TFC12	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC13	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC9, UL_TFC10, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC20	UL_TFC5, UL_TFC14	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC9, UL_TFC11, UL_TFC12, UL_TFC14	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC21	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC22	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
8	DL_TFC8, DL_TFC23	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC9, DL_TFC24	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 952
10	DL_TFC10, DL_TFC25	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 952
11	DL_TFC11, DL_TFC26	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 952
12	DL_TFC12, DL_TFC27	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 1272
13	DL_TFC13, DL_TFC28	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 1272
14	DL_TFC14, DL_TFC29	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC9 are part of minimum set of TFCs						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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).						

14.2.39.2.4 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 TFCs 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

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CHANGE REQUEST
⌘ 34.123-1 CR 770 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Future compatibility of RRC critical extension testing		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 19/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Future compatibility of RRC critical extension testing for test case 8.1.6.2 (inline with discussion document T1-040053).
Summary of change:	⌘ Critical extensions in 8.1.6.2 RRC test case of Invalid DOWNLINK DIRECT TRANSFER message changed from '01'H to 'FF' H.
Consequences if not approved:	⌘ Much work needed for testing of critical extensions for every 3GPP release.

Clauses affected:	⌘ 8.1.6.2.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"></td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px;">X</td> </tr> </table>	Y	N	X		X			X	Other core specifications	⌘ 34.123-1
	Y	N									
	X										
X											
	X										
Test specifications											
O&M Specifications											
Other comments:	⌘										

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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.

8.1.6.2 Direct Transfer in CELL FACH state (invalid message reception and no signalling connection exists)

8.1.6.2.1 Definition

8.1.6.2.2 Conformance requirement

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED_SIGNALLING_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

...

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

...

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";

Reference

3GPP TS 25.331 clause 8.1.9.3a, 8.1.9.4, 9.3b.

8.1.6.2.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which does not include any IEs except IE "Message Type". To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which includes an invalid IE "CN domain identity".

8.1.6.2.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

The UE is in the CELL_FACH state. The SS transmits an invalid DOWNLINK DIRECT TRANSFER message to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message extension not comprehended" shall be indicated in IE "Protocol error cause". The SS transmits a DOWNLINK DIRECT TRANSFER message that contains an invalid IE "CN domain identity" to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message not compatible with receiver state" shall be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	See specific message content
2		→	RRC STATUS	
3		←	DOWNLINK DIRECT TRANSFER	Sent from a new CN domain.
4		→	RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Critical extentions	'01'H'FF'H

RRC STATUS (Step 2)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received messag type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 1.
Protocol error information – Protocol error cause	Message extension not comprehended

DOWNLINK DIRECT TRANSFER (Step 3)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain or PS domain as unselected domain
NAS message	Arbitrary message.

RRC STATUS (Step 4)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 3.
Protocol error information – Protocol error cause	Message not compatible with receiver state

8.1.6.2.5 Test requirement

After step 1 the UE shall transmit an RRC STATUS message on the DCCH using AM RLC setting "Message extension not comprehended" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

After step 3 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "Message not compatible with receiver state" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

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CHANGE REQUEST
⌘ 34.123-1 CR 771 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Editorial correction for 8.3.1.31		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 19/04/2004
Category:	⌘ D	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ 1c and 1d Specific message contents are Unnecessary information since Steps 1c and 1d are no longer valid in Test case Sequences.
Summary of change:	⌘ Removed the Specific message contents of steps 1c and 1d.
Consequences if not approved:	⌘ There will be a conflict between the Test case expected Sequences and Specific Message contents.

Clauses affected:	⌘ 8.3.1.31.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	34.123-1
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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.

8.3.1.31 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 (N_{serv} 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 - Cell Value tag	- Scheduling info for System Information Type 3 2
Scheduling information - Cell Value tag	- Scheduling info for System Information Type 4 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

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

~~URA UPDATE (Step 1c)~~

~~The same message found in Clause 9 of TS 34.108 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'
URA Update Cause	Check to see if set to 'periodical URA update'

~~URA UPDATE CONFIRM (Step 1d)~~

~~Use the same message sub-type found in Clause 9 of TS 34.108, with the following exceptions:~~

Information Element	Value/remark
URA identity	URA-ID-4

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.

CHANGE REQUEST

⌘ **34.123-1 CR 772** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 in Specific Message Contents for clause 8.3.1.5.4 and 8.3.1.6.4
Source:	⌘	Sasken Communication Technologies Limited, MCC Task 160
Work item code:	⌘	TEI
		Date: ⌘ 23/04/2004
Category:	⌘	F
		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </div> <div style="width: 45%;"> <p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </div> </div>

Reason for change: ⌘ 1) As per 3GPP 25.331 clause 8.2.2.3,
 "If after state transition the UE enters URA_PCH state, the UE shall, after the state transition and transmission of the response message:

.....

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

.....

If after state transition the UE enters CELL_PCH state from CELL_FACH state, the UE shall, after the state transition and transmission of the response message:

.....

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI; "

Thus CRNTI should not be sent to the mobile in the PHYSICAL CHANNEL RECONFIGURATION message.

2) For these test cases, as per the current version of 34.123-1, at Step 7 of the expected sequence for the Cell Update Confirm message, New C-RNTI sent is '1010 1010 1010 1010' . However the same value is assigned to the Mobile during Radio Bearer Setup.

Thus in order to check if the UE is properly updating a new CRNTI, new CRNTI

value set in Cell Update Confirm message should be different than '1010 1010 1010 1010' .	
Summary of change: ⌘	1) In the Specific Message Contents for PHYSICAL CHANNEL RECONFIGURATION added New C-RNTI as Not Present in the test case 8.3.1.5 and 8.3.1.6. 2) New C-RNTI value in Cell Update Confirm message at step 7 is changed to "Set to an arbitrary string different from '1010 1010 1010 1010' " instead of '1010 1010 1010 1010'.
Consequences if not approved: ⌘	Inconsistency between core specs and prose.

Clauses affected: ⌘	8.3.1.5.4, 8.3.1.6.4									
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td>X</td> <td></td> </tr> </table>	Y	N		X	X		X		Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘
	Y	N								
		X								
X										
X										
34.123-1										
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.

8.3.1.5 Cell Update: UL data transmission in URA_PCH

8.3.1.5.1 Definition

8.3.1.5.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

...

Reference

3GPP TS 25.331 clause 8.3.1 and 8.1.2

8.3.1.5.3 Test purpose

1. To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in URA_PCH state.

8.3.1.5.4 Method of test

Initial Condition

System Simulator: 1cell

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

The UE has been registered in both CS and PS domains.

Test Procedure

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message with IE "RRC State Indicator" set to "URA_PCH". The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to URA_PCH state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI and the optional IE "CN originated page to connected mode UE". The UE then moves to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH, with the IE "Cell update cause" set to value "uplink data transmission". After receiving such a message, SS transmits CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit an INITIAL DIRECT TRANSFER message using AM RLC on DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2			Void	
3			Void	
4		←	PHYSICAL CHANNEL RECONFIGURATION	IE "RRC State Indicator" set to "URA_PCH"
5		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE moves to URA_PCH state.
5a		←	PAGING TYPE 1	Includes Matched identifier and optional IE "CN originated page to connected mode UE"
6		→	CELL UPDATE	The UE shall move to CELL FACH state with the message set to "uplink data transmission" in IE "Cell update cause".
7		←	CELL UPDATE CONFIRM	See message content.
7a		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	INITIAL DIRECT TRANSFER	Response to the paging message sent in step 5a

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_FACH in PS", with the following exceptions:

Information Element	Value/remark
New C-RNTI	Not Present
RRC State Indicator	URA_PCH
URA identity	0000 0000 0000 0001B
UTRAN DRX cycle length coefficient	3

PAGING TYPE 1 (Step 5a)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- 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	
-Paging cause	Terminating Call supported by the UE in the CS domain
-CN domain identity	CS Domain
-Paging record type identifier	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.
BCCH modification info	Not Present

CELL UPDATE (Step 6)

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' Check to see if set to '0000 0000 0000 0000 0001' Check to see if set to 'uplink data transmission'

CELL UPDATE CONFIRM (Step 7)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '1010 1010 1010 1010'

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

Check to see if the same message type found in TS 34.108 clause 9 is received, with the following exceptions:

Information Element	Value/remark
CN domain identity Intra Domain NAS Node Selector - CHOICE version -- CHOICE CN type --- CHOICE Routing basis ---- Routing parameter --- Entered parameter NAS message	CS domain R99 GSM Local(P)TMSI This bit string is set to bits b14 through b23 of the TMSI. The TMSI 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" bit string consists of bits b14 through b23 of the TMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI Not checked Not checked

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
CN domain identity Intra Domain NAS Node Selector - CHOICE version NAS message START Measured results on RACH	CS Domain ANSI-41 : Bitstring(14), all bits set to 0 Not checked Not checked Not checked

8.3.1.5.5 Test requirement

After step 4, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to URA_PCH state.

After step 5a, the UE shall move to CELL_FACH state to initiate a cell update procedure and transmits a CELL UPDATE message which is set to "uplink data transmission" in IE "Cell update cause".

After step 7, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7a, UE shall transmit INITIAL DIRECT TRANSFER message to SS using AM RLC on DCCH.

8.3.1.6 Cell Update: UL data transmission in CELL_PCH

8.3.1.6.1 Definition

8.3.1.6.2 Conformance requirement

A UE shall initiate the cell update procedure in the following cases:

1> Uplink data transmission:

2> if the UE is in URA_PCH or CELL_PCH state; and

2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:

3> perform cell update using the cause "uplink data transmission".

...

Reference

3GPP TS 25.331 clause 8.3.1 and 8.1.2

8.3.1.6.3 Test purpose

1. To confirm that the UE executes a cell update procedure when the UE transmits uplink data if the UE is in CELL_PCH state.

8.3.1.6.4 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.

The UE is registered in both CS and PS domains.

Test Procedure

The UE is in the CELL_FACH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message with IE "RRC State Indicator" set to "CELL_PCH". The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to CELL_PCH state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI and the optional IE "CN originated page to connected mode UE". The UE then moves to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH, with the IE "Cell update cause" set to value "uplink data transmission". After receiving such a message, SS transmits a CELL UPDATE CONFIRM message on downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit an INITIAL DIRECT TRANSFER message using AM RLC on DCCH .

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2			Void	
3			Void	
4		←	PHYSICAL CHANNEL RECONFIGURATION	IE "RRC State Indicator" set to "CELL_PCH"
5		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE moves to CELL_PCH state.
5a		←	PAGING TYPE 1	Includes Matched identifier and optional IE "CN originated page to connected mode UE"
6		→	CELL UPDATE	The UE moves to CELL FACH state and transmit this message which is set to "uplink data transmission" in IE "Cell update cause".
7		←	CELL UPDATE CONFIRM	See message content .
7a		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		→	INITIAL DIRECT TRANSFER	Response to the paging message sent in step 5a

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in TS 34.108 clause 9, which is entitled "Packet to CELL_FACH from CELL_FACH in PS", with the following exceptions:

Information Element	Value/remark
<u>New C-RNTI</u>	<u>Not Present</u>
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

PAGING TYPE 1 (Step 5a)

Information Element	Value/remark
Message Type	
Paging record list	Only 1 entry
Paging record	
- 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	
-Paging cause	Terminating Call supported by the UE in the CS domain
	CS Domain
-CN domain identity	Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.
-Paging record type identifier	
BCCH modification info	Not Present

CELL UPDATE (Step 6)

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	Check to see if set to '0000 0000 0001'
- SRNC Identity	Check to see if set to '0000 0000 0000 0000 0001'
- S-RNTI	Check to see if set to 'uplink data transmission'
Cell Update Cause	Check to see if set to 'uplink data transmission'

CELL UPDATE CONFIRM (Step 7)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '1010 1010 1010 1010'

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting GSM-MAP core networks

Check to see if the same message type found in TS 34.108 clause 9 is received, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain
Intra Domain NAS Node Selector	R99
- CHOICE version	GSM
-- CHOICE CN type	Local(P)TMSI
--- CHOICE Routing basis	This bit string is set to bits b14 through b23 of the TMSI. The TMSI 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
---- Routing parameter	The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI. The first/ leftmost/ most significant bit of the bit string contains bit b23 of the TMSI
--- Entered parameter	Not checked
NAS message	Not checked

INITIAL DIRECT TRANSFER (Step 8) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
CN domain identity	CS Domain
Intra Domain NAS Node Selector	ANSI-41 : Bitstring(14), all bits set to 0
- CHOICE version	ANSI-41 : Bitstring(14), all bits set to 0
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

8.3.1.6.5 Test requirement

After step 4, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and move to CELL_PCH state.

After step 5, the UE shall move to CELL_FACH state to initiate a cell update procedure and transmits a CELL UPDATE message which is set to "uplink data transmission" in IE "Cell update cause".

After step 7, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7a, UE shall transmit a INITIAL DIRECT TRANSFER message to SS using AM RLC on DCCH.

CHANGE REQUEST

⌘ **34.123-1 CR 773** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 test case for Interactive or background / UL:64 DL:768 kbps / 10 ms TTI		
Source:	⌘ Nokia		
Work item code:	⌘ TEI Date: ⌘ 27/04/2004		
Category:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> ⌘ F Use <u>one</u> 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. </td> <td style="width: 50%; vertical-align: top;"> Release: ⌘ Rel-5 Use <u>one</u> 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) </td> </tr> </table>	⌘ F Use <u>one</u> 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 .	Release: ⌘ Rel-5 Use <u>one</u> 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)
⌘ F Use <u>one</u> 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 .	Release: ⌘ Rel-5 Use <u>one</u> 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:	⌘ 34.108 RAB combination "Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH/ 10 ms TTI" needs to be tested in 34.123-1.
Summary of change:	⌘ Test case details added in clause 14.2.63.1.
Consequences if not approved:	⌘ Missing test case.

Clauses affected:	⌘ 14.2.63.1							
Other specs affected:	<table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">Y</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	⌘ 34.123-2, 34.123-3
Y	N							
X	X							
X	X							
Other comments:	⌘ The corresponding 34.123-2 CR in T1-040571.							

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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.

14.2.63 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (Rel-5)

14.2.63.1 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH/ 10 ms TTI

[14.2.63.1.1 Conformance requirement](#)

[See 14.2.4.1.](#)

[14.2.63.1.2 Test purpose](#)

[Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.63 for the downlink 10 ms TTI case.](#)

[14.2.63.1.3 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 (768 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
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF7, TF0)</u>
<u>DL_TFC8</u>	<u>(TF8, TF0)</u>
<u>DL_TFC9</u>	<u>(TF0, TF1)</u>
<u>DL_TFC10</u>	<u>(TF1, TF1)</u>
<u>DL_TFC11</u>	<u>(TF2, TF1)</u>
<u>DL_TFC12</u>	<u>(TF3, TF1)</u>
<u>DL_TFC13</u>	<u>(TF4, TF1)</u>
<u>DL_TFC14</u>	<u>(TF5, TF1)</u>
<u>DL_TFC15</u>	<u>(TF6, TF1)</u>
<u>DL_TFC16</u>	<u>(TF7, TF1)</u>
<u>DL_TFC17</u>	<u>(TF8, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitely tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
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

NOTE 1: [UL_TFC0](#), [UL_TFC1](#) and [UL_TFC5](#) are part of minimum set of TFCs.

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.](#)

[14.2.63.1.4 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 8: RB5/TF4 (4x336).

3. At step 15 the UE shall return

- for sub-test 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.

~~TBD~~

14.2.63.2 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / 20 ms TTI

14.2.63.2.1 Conformance requirement

See 14.2.4.1.

14.2.63.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.63 for the downlink 20 ms TTI case.

14.2.63.2.3 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 (768 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
	TF9, bits	28x336	N/A
	TF10, bits	32x336	N/A
	TF11, bits	36x336	N/A
	TF12, bits	40x336	N/A
	TF13, bits	44x336	N/A
	TF14, bits	48x336	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	(TF0, TF1)
DL_TFC16	(TF1, TF1)
DL_TFC17	(TF2, TF1)
DL_TFC18	(TF3, TF1)
DL_TFC19	(TF4, TF1)
DL_TFC20	(TF5, TF1)
DL_TFC21	(TF6, TF1)
DL_TFC22	(TF7, TF1)
DL_TFC23	(TF8, TF1)
DL_TFC24	(TF9, TF1)
DL_TFC25	(TF10, TF1)
DL_TFC26	(TF11, TF1)
DL_TFC27	(TF12, TF1)
DL_TFC28	(TF13, TF1)
DL_TFC29	(TF14, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 8952	RB5: 8952
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
11	DL_TFC11	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 11512	RB5: 11512
12	DL_TFC12	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
13	DL_TFC13	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 14072	RB5: 14072

14	DL_TFC14	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>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 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.</p>						

See 14.1.1 for test procedure.

14.2.63.2.4 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 14: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2 and 4 to 14: 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.

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 778 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 initial conditions of Idle Mode test case 6.2.1.6		
Source:	⌘ Sasken Communication Technologies Ltd.,		
Work item code:	⌘ TEI	Date:	⌘ 22/04/2004
Category:	⌘ F	Release:	⌘ REL-5

Reason for change:	⌘ The change is done to ensure that a multi-RAT UE selects a cell belonging to the HPLMN on switch-ON inspite of a better cell of a UPLMN being present.
Summary of change:	⌘ The Initial Conditions are changed to add a UPLMN.
Consequences if not approved:	⌘ Correct behavior of the UE will not be tested.

Clauses affected:	⌘ 6.2.1.6.4						
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘ 34.123-1 clause 6.2.1.6
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications					
Other comments:	⌘						

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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

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 HPLMN 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. 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. Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

- 3.1 HPLMN (if not previously selected);
- 3.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 3.3 Each PLMN 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.

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.
2. TS 23.122, clause 4.4.3.
3. TS 23.122, clause 4.4.3.1.1.

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.

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

Initial conditions

The UE is in automatic PLMN selection mode.
Cell levels are from tables 6.3 and 6.4.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP / RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 2	UTRAN
Cell 2	-48	-48	1	PLMN 2	GSM
Cell 3	-75 -60	-64 -60	2	PLMN 3	UTRAN
Cell 4	-50	-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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
<u>EF_{PLMNwACT}</u>	<u>1st</u>	<u>PLMN3</u>	<u>UTRAN</u>

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}	1 st	PLMN 2	UTRAN
	2 nd		
<u>EF_{PLMNwACT}</u>	<u>1st</u>	<u>PLMN3</u>	<u>UTRAN</u>

The HPLMN (MCC+MNC) of the IMSI for USIM B is set to PLMN2.

Test procedure

Method C is applied.

- The SS activates cells 1-4 3 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.
- The UE is switched on.
- 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).
- 2) In step e), the response from the UE shall be on Cell 2 (2nd priority RAT for $EF_{HPLMNwAcT}$). 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). (PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE-supported RATs).

CR-Form-v7
CHANGE REQUEST
№ 34.123-1 CR 779 № rev - № Current version: 5.7.1 №

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:	№ Changes to test procedure of Cell Reselection Case 8.3.9.3		
Source:	№ Sasken Communication Technologies Ltd.,		
Work item code:	№ TEI	Date:	№ 28/04/2004
Category:	№ F	Release:	№ REL-5

Reason for change:	№ The UE is in Cell_FACH state and to inform UE of a decrease in Qrxlevmin in Step f) , a SYSTEM INFORMATION CHANGE IND has to be sent by SS to UE.		
Summary of change:	№ In Step f) SS should send a SYSTEM INFORMATION CHANGE IND to UE.		
Consequences if not approved:	№ UE will not behave as expected.		

Clauses affected:	№ 8.3.9.3.4						
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	№ 34.123-1 clause 8.3.9.3
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
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X	<input type="checkbox"/>						
<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications				
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
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

8.3.9.3 Cell reselection if $S < 0$; UTRAN to GPRS (UE in CELL_FACH fails to complete an inter-RAT cell reselection)

8.3.9.3.1 Definition

8.3.9.3.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.3.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_FACH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.3.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 2 is GPRS with PBCCH. 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.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS).

The 3G Neighbour Cell Description of Cell 2 (GPRS) refers to Cell 1 (UTRAN)

UE: PS-DCCH+DTCH_FACH (State 6-11) in cell 1 (UTRAN) 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.

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH E_c (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
$Q_{rxlevmin}$	dBm	-101
$T_{reselection_s}$	s	5
S_{rxlev}^*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
GPRS_RXLEV_A CCESS_MIN	dBm	-100
C1*	dBm	20
C32*	dB	20
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	41-> -19

Step f:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-41-> -101
Srxlev*	dB	-19 -> 41

Test procedure

- a) The SS activates cells 1 and 2. The SS monitors cells 1 and 2 for random access requests from the UE.
- b) The UE is switched on.
- c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11).
- d) The SS increases Qrxlevmin, so S will become negative.
- e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.
- f) The SS decreases Qrxlevmin, so S will become positive (After the expiry of the timer T3selection). [The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of this change in the system information](#)
- g) SS calls for generic procedure C.2 in cell 1 (UTRAN) to check that UE is in CELL_FACH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure

8.3.9.3.5 Test Requirements

In step f, the UE remains in CELL_FACH in cell1.

CHANGE REQUEST

⌘ **34.123-1 CR 781** ⌘ rev - ⌘ Current version: **5.7.0** ⌘

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 number of reported cells in RRC P2 test case 8.4.1.7		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change: ⌘ As per 25.331 clause 8.4.0, "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."

In this test case the IE "Cells for measurement" is included specifying that only Cell 3 shall be considered for measurement and it is expected in the test case that Cell 3 is reported in Step 5.

According to section 8.6.7.9 and 10.3.7.44 of TS 25.331, UE orders the cells sent in measured results of the measurement report based on received power levels. In this case, Cell 3 that triggered the event for which the measurement report is being sent shall not be included in the measured results as number of reported cells is set to 1 and Cell 2 (also a monitored cell) has a higher power level than Cell 3.

Cell 1 with power level of -120 dBm cannot be detected by UE and won't be included in the measurement report.

Summary of change: ⌘

1. 'Maximum number of reported cells' in SIB 12 (step 1) changed to 3.
2. 'Maximum number of reported cells' in Measurement Control message (step 5) changed to 3.
3. Cell 1 power level at time instants T1 and T2 is changed to -70dBm , so that

UE can detect the cell and include it in measurement report of step 26

4. Measurement results of Cell 2 included in the Measurement Report received in steps 6 and 6a.

5. The order of cells included in cell measured results in step 26 should be Cell 2, Cell 3 & Cell 1. Cells 2 and 3 may come in any order as they have the same power level.

Consequences if not approved: ⌘ Test as specified is incorrect

Clauses affected: ⌘ 8.4.1.7

	Y	N		
Other specs affected:	⌘	X	Other core specifications	⌘ 34.123-3
	X		Test specifications	
		X	O&M Specifications	

Other comments: ⌘ Affects R99 & later releases

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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

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 transitioned 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.

Reference

3GPP TS 25.331, clause 8.4.1.3, 8.4.1.6a and 8.4.1.7.1

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.

- 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.

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	122 70	122 70	-70	-60	-60	-75	-75	-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 **only** measurement readings for cell 3 's CPICH RSCP are reported **ed** 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, instead of the ones that are broadcast in SIB12 (step 14f).

Following the reception of the MEASUREMENT REPORT message, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12 (step 15). Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 16). 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.
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				
12		←	Void	
13		→	Void	
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.

Step	Direction		Message	Comment
	UE	SS		
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 CONTROL	Terminate all the intra-frequency measurement and reporting activities related to "measurement identity" = 12.
16				SS waits and verifies that UE stop transmitting MEASUREMENT REPORT messages.
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".
18		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates common physical channels.
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 reconfigures the downlink transmission power settings for cells 1 to 3 according to column "T1" in table 8.4.1.7. SS sends SIB11 and SIB12 with specific values to Cell2.
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	

Step	Direction		Message	Comment
	UE	SS		
28		→	MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 3, with "measurement identity" IE set to "1".

Specific Message Content

Master Information Block (Step 1)

Information Element	Value/Remarks
MIB Value Tag	3

System Information Block type 11 for cell 1 (Step 1)

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	Not present
- 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 - Reporting cell status - CHOICE reported cells	Not Present Report cells within monitored set cells on used frequency
- Maximum number of reported cells - Inter-frequency measurement system information - Inter-RAT measurement system information - Traffic volume measurement system information	43 Not Present Not Present 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 and 9c)

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	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Intra-frequency measurement
CHOICE measurement type	Remove no intra-frequency cells
- Intra-frequency cell info list	3
- CHOICE intra-frequency cell removal	0 dB
- New intra-frequency info list	Not Present
- Intra-frequency cell id	FALSE
- Cell info	FDD
- Cell individual offset	Set to same code as used for cell 3
- Reference time difference to cell	Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	Set to same code as used for cell 3
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- TX Diversity Indicator	Not Present
- Cells selection and Re-selection info	Not Present
- Cells for measurement	3
- Intra-frequency cell id	Not Present
- Intra-frequency measurement quantity	CPICH RSCP
- Filter Coefficient	Not Present
- Measurement quantity	FALSE
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	FALSE
- 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	FALSE
- 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	1e
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	Set to the same scrambling code for cell 3
- Primary Scrambling Code	Not Present
- W	0 dB
- Hysteresis	Not Present
- 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	Report cells within monitored set cells on used frequency
- CHOICE reported cells	Report cells within monitored set cells on used frequency

- Maximum number of reported cells
DPCH compressed mode status info

34
Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Measurement identity Measured Results <ul style="list-style-type: none"> - CHOICE measurement - Intra-frequency measurement results <ul style="list-style-type: none"> - Cell measured results - Cell Identity - Cell synchronisation information <ul style="list-style-type: none"> - Primary CPICH Info - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH Info</u> - <u>Primary Scrambling Code</u> - <u>CPICH Ec/No</u> - <u>CPICH RSCP</u> - <u>Pathloss</u> Measured Results on RACH Additional measured results Event Results <ul style="list-style-type: none"> - CHOICE event result - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code 	Check to see if set to 11 Check to see if set to "Intra-frequency measured results list" Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if it's the same code for cell 23 Check to see if this IE is absent Check to see if this IE is present Check to see if this IE is absent <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if it's the same code for cell 3</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is present</u> <u>Check to see if this IE is absent</u> Check to see if this IE is absent Check to see if this IE is absent Check to see if it's set to 'Intra-frequency measurement event results' Check to see if this IE is set to '1e' Check to see if it's the same code for cell 3

MEASUREMENT REPORT (Step 6a)

Information Element	Value/remark
Measurement identity Measured Results <ul style="list-style-type: none"> - CHOICE measurement - Intra-frequency measurement results - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH Info <ul style="list-style-type: none"> - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss - Cell measured results - Cell Identity - Cell synchronisation information - Primary CPICH Info - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss Measured Results on RACH Additional measured results Event Results <ul style="list-style-type: none"> - CHOICE event result - Intra-frequency event identity - Cell measurement event results - Primary CPICH info - Primary scrambling code 	Check to see if set to 10 Check to see if set to "Intra-frequency measured results list" Check to see if this IE is absent Check to see if this IE is absent Check to see if it's the same code for cell 3 Check to see if this IE is absent Check to see if this IE is present Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if it's the same code for cell 3 Check to see if this IE is absent Check to see if this IE is present Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if it's set to 'Intra-frequency measurement event results' Check to see if this IE is set to '1e' 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
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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 15)

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)

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	Not present
reporting	
- 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 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/No 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/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 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 present
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 42
- 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 absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 23
- 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 31
- 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	FALSE
indicator	
- 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	FALSE
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	Not present
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Intra-frequency measurement criteria
- CHOICE report criteria	1e
- Parameters required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	Not Present
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	FDD
- CHOICE Mode	Set to the same scrambling code for cell 3
- Primary CPICH Info	Not Present
- Primary Scrambling Code	0 dB
- W	Not Present
- Hysteresis	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	-90 dBm
- Threshold used frequency	0
- Time to Trigger	Not Present
- Amount of reporting	Not Present
- Reporting interval	Report cells within monitored set cells on used frequency
- Reporting cell status	1
- CHOICE reported cells	Not Present
- Maximum number of reported cells	
DPCH compressed mode status info	

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 15 the UE shall stop measurement activities pertaining to periodic reporting of cell 2's CPICH RSCP, no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH.

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'.

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 782** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 Low Priority RRC Cell Change Order Test Cases		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ Cell Change Order Message Contents <ul style="list-style-type: none"> The value of BSIC and BCCH ARFCN are not aligned with the default values set when cell is created IE BCCH ARFCN value doesn't cover different GSM Bands.
Summary of change:	⌘ In specific Message Contents for Cell Change Order <ul style="list-style-type: none"> IE BSIC value is specified as 'BSIC of Cell <number>' IE BCCH ARFCN value is specified as 'Allocated BCCH ARFCN of Cell <number>' The IE ARFCN Band value is specified as 'Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"'
Consequences if not approved:	⌘ Test as specified is incorrect and no test coverage for certain GSM Bands.

Clauses affected:	⌘ 8.3.11.2, 8.3.11.3, 8.3.11.5 & 8.3.11.6										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Applicable to R99 and later releases										

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.

8.3.11.2 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Success

8.3.11.2.1 Definition

8.3.11.2.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM. To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

- 1> the UE behaviour is not specified.

The UE shall:

- 1> start timer T309; and
 - 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and
 - 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:
 - 2> retrieve it from the target cell as specified in [43];
 - 2> act upon IE "NC mode" as specified in [43].
 - 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:
 - 2> ignore the contents of the IE "RAB Information List".

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. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11, B.6

8.3.11.2.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a CHANNEL REQUEST in the new cell.

8.3.11.2.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, Cell 2 is GPRS with PBCCH. 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 and location area.

UE: PS-DCCH+DTCH_FACH (state 6-11) 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_FACH (state 6-11). 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. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the

CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into PS-DCCH_DTCH_FACH (State 6-11) 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 GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS specified in the CELL CHANGE ORDER FROM UTRAN
5	→		PACKET CHANNEL REQUEST	The SS receives this burst on PRACH of cell 2 (GPRS cell) to establish temporary block flow. It implies that the UE has switched to GPRS cell.
6	←		PACKET UPLINK ASSIGNMENT	Uplink dynamic allocation Sent on PAGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info - Message authentication code - RRC Message sequence number Activation time Target cell description - CHOICE <i>Radio Access Technology</i> - GSM - BSIC - Band Indicator - BCCH ARFCN - NC mode	Arbitrarily selects one integer between 0 to 3 SS calculates the value of MAC-I for this message and writes to this IE. SS provides the value of this IE, from its internal counter. Now <u>BSIC1 BSIC of Cell 2</u> <u>DCS 1800 band used Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"</u> <u>+ Allocated BCCH ARFCN of Cell 2</u> NOT PRESENT

8.3.11.2.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

8.3.11.3 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Failure (T309 expiry)

8.3.11.3.1 Definition

8.3.11.3.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:
 - 2> revert back to the UTRA configuration;
 - 2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;
 - 2> if the UE does not succeed in establishing the UTRA physical channel(s):
 - 3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
 - 3> when the cell update procedure has completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> 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
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.3.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

- a. revert back to the UTRA configuration;
- b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

- c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.3.4 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 and location area.

UE: PS-DCCH_DCH (State 6-7) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- 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 state PS-DCCH_DCH (State 6-7). 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 starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH _DCH (State 6-7) 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.
4	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the 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
6	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire.
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

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	

Information Element	Value/remark
- 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 <i>Radio Access Technology</i>	
- GSM	
- BSIC	BSIC1 BSIC of Cell 2
- Band Indicator	DCS 1800 band used Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"
- BCCH ARFCN	4 Allocated BCCH ARFCN of Cell 2
- NC mode	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 - 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. 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

8.3.11.3.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.5 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Failure (T309 expiry)

8.3.11.5.1 Definition

8.3.11.5.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:

- 2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
- 2> if the UE is unable to return to this cell:
 - 3> select a suitable UTRA cell according to [4];
 - 3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";
 - 3> when the cell update procedure completed successfully:
 - 4> proceed as below.
- 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
- 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
 - 3> the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.5.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

- a. revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
- b. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.5.4 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 and location area.

UE: PS-DCCH+DTCH_FACH (State 6-11) 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_FACH (state 6-11). 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 starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the Channel Request message transmitted by UE till the timer T309 expires. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH+DTCH_FACH (State 6-11) 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.
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
6	→			SS does not respond to the channel request. UE transmits CHANNEL REQUEST message M+1 times.
				The SS does not transmit a response and wait for T309 timer to expire.
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info - Message authentication code - RRC Message sequence number Activation time Target cell description - CHOICE <i>Radio Access Technology</i> - GSM - BSIC - Band Indicator	Arbitrarily selects one integer between 0 to 3 SS calculates the value of MAC-I for this message and writes to this IE. SS provides the value of this IE, from its internal counter. Now BSIC4 BSIC of Cell 2 DCS 1800 band used Set to "GSM/ PCS 1900" if GSM/

Information Element	Value/remark
- BCCH ARFCN - NC mode	PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" + Allocated BCCH ARFCN of Cell 2 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 - 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. 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

8.3.11.5.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.
In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.11.6 Inter-RAT cell change order from UTRAN/To GPRS/CELL_FACH/Failure (Physical channel Failure and Reversion Failure)

8.3.11.6.1 Definition

8.3.11.6.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state:
 - 2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
 - 2> if the UE is unable to return to this cell:
 - 3> select a suitable UTRA cell according to [4];
 - 3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";
 - 3> when the cell update procedure completed successfully:

- 4> proceed as below.
- 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
- 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
 - 3> the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.6.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_FACH state and if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

- a. revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
- b. if the UE is unable to return to this cell:
 - select a suitable UTRA cell;
- c. initiate the cell update procedure using the cause "cell re-selection";
- d. when the cell update procedure is completed successfully, it transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.6.4 Method of test

Initial conditions

System Simulator: 3 cells - Cell 1, Cell 2 are UTRAN, Cell 3 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 3.

All cells belong to the same PLMN and location area.

UE: PS-DCCH+DTCH_FACH (State 6-11) 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

Table 8.3.11.6

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	Off	-75	-60

Table 8.3.11.6 illustrates the downlink power to be applied for the 2 UTRAN 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 SS starts the UTRAN cell and brings the UE into PS-DCCH+DTCH_FACH (state 6-11). 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 SS configures its downlink transmission power settings according to columns "T1" in table 8.3.11.6. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE 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 bring the UE into PS-DCCH+DTCH_FACH (State 6-11) in cell 1
2	SS			The SS configures cell 3 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			The SS applies the downlink transmission power settings, the values in columns "T1" of table 8.3.11.6.
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 the traffic channel 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			VOID	
9	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
10	←		CELL UPDATE CONFIRM	See message content.
11	→		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 Integrity check info - Message authentication code - RRC Message sequence number Activation time Target cell description - CHOICE <i>Radio Access Technology</i> - GSM - BSIC - Band Indicator - BCCH ARFCN - NC mode	Arbitrarily selects one integer between 0 to 3 SS calculates the value of MAC-I for this message and writes to this IE. SS provides the value of this IE, from its internal counter. Now <u>BSIC</u> <u>BSIC of Cell 3</u> DCS 1800 band used <u>Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"</u> <u>+ Allocated BCCH ARFCN of Cell 3</u> 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
Cell Update Cause	"cell reselection"

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

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 - 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. 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

8.3.11.6.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 9 the SS shall receive CELL UPDATE message on the old channel of the UTRAN cell with the IE "Cell update cause" set to cause " cell reselection ".

In step 11 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message with the IE " Inter-RAT change failure cause" set to "physical channel failure".

CHANGE REQUEST

34.123-1 CR 784 # rev **-** # Current version: **5.7.0**

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 P4 RRC Cell Change Order Test Cases		
Source:	# Motorola		
Work item code:	# TEI	Date:	# 02/05/04
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# Cell Change Order Message Contents <ul style="list-style-type: none"> The value of BSIC and BCCH ARFCN are not aligned with the default values set when cell is created IE BCCH ARFCN value doesn't cover different GSM Bands.
Summary of change:	# In specific Message Contents for Cell Change Order <ul style="list-style-type: none"> IE BSIC value is specied as 'BSIC of Cell <number>' IE BCCH ARFCN value is specified as 'Allocated BCCH ARFCN of Cell <number>', The IE ARFCN Band value is specified as 'Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"'
Consequences if not approved:	# Test as specified is incorrect and no test coverage for certain GSM Bands.

Clauses affected:	# 8.3.11.1 & 8.3.11.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	# 34.123-3
Y	N										
	X										
X											
	X										
		Test specifications									
		O&M Specifications									
Other comments:	# Applicable to R99 and later releases										

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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.

8.3.11.1 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Success

8.3.11.1.1 Definition

8.3.11.1.2 Conformance requirement

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL_DCH and CELL_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

The procedure is initiated when UTRAN orders a UE in CELL_DCH or CELL_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM. To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED_SIGNALLING_CONNECTIONS includes the CN domain identity "CS domain":

- 1> the UE behaviour is not specified.

The UE shall:

- 1> start timer T309; and

- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and

- 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:

- 2> retrieve it from the target cell as specified in [43];

- 2> act upon IE "NC mode" as specified in [43].

- 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:

- 2> ignore the contents of the IE "RAB Information List".

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. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

1> stop timer T309;

1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

1> release the radio connection; and

1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

Reference(s)

TS 25.331 clause 8.3.11, B.6

8.3.11.1.3 Test purpose

To test that the UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and perform a cell change to another RAT, even if no prior UE measurements have been performed on the target cell. The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

8.3.11.1.4 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 and 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. After the UE receives the command it shall configure itself accordingly and switch to the new channel on the target GPRS cell. The SS checks whether the cell change is performed by checking that the UE receives a successful response to the CHANNEL REQUEST message from the SS through GPRS cell. The UE sends a RA UPDATE REQUEST message to indicate that the UTRAN UE context needs to be transferred to GPRS.

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 GPRS.
4	UE			The UE accepts the cell change command and switches to the GPRS cell specified in the CELL CHANGE ORDER FROM UTRAN
5	→		CHANNEL REQUEST	The SS receives this burst on the RACH of cell 2 to establish temporary block flow (GPRS cell). It implies that the UE has switched to GPRS cell.
6	←		IMMEDIATE ASSIGNMENT	Uplink dynamic allocation. Sent on AGCH.
7	→		ROUTING AREA UPDATE REQUEST	

Specific message contents

CELL CHANGE ORDER FROM UTRAN

Information Element	Value/remark
Message Type RRC transaction identifier Integrity check info - Message authentication code - RRC Message sequence number Activation time Target cell description - CHOICE <i>Radio Access Technology</i> - GSM - BSIC - Band Indicator - BCCH ARFCN - NC mode	Arbitrarily selects one integer between 0 to 3 SS calculates the value of MAC-I for this message and writes to this IE. SS provides the value of this IE, from its internal counter. Now <u>BSIC1 BSIC of Cell 2</u> DCS 1800 band used <u>Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band"</u> <u>+ Allocated BCCH ARFCN of Cell 2</u> NOT PRESENT

8.3.11.1.5 Test requirement

After step 3 the UE shall transmit a CHANNEL REQUEST message on RACH.

< Next Modified Section >

8.3.11.4 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Failure (Physical channel Failure and Reversion Failure)

8.3.11.4.1 Definition

8.3.11.4.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:
 - 2> revert back to the UTRA configuration;
 - 2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;
 - 2> if the UE does not succeed in establishing the UTRA physical channel(s):
 - 3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
 - 3> when the cell update procedure has completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> 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
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.4.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

- a. revert back to the UTRA configuration;

- b. if the UE does not succeed in establishing the UTRA physical channel(s):
 - perform a cell update procedure with cause "Radio link failure";
- c. when the cell update procedure is completed successfully, it transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

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 and 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 Integrity check info - Message authentication code - RRC Message sequence number Activation time Target cell description - CHOICE <i>Radio Access Technology</i> - GSM - BSIC - Band Indicator - BCCH ARFCN - NC mode	Arbitrarily selects one integer between 0 to 3 SS calculates the value of MAC-I for this message and writes to this IE. SS provides the value of this IE, from its internal counter. Now BSIC⁴ BSIC of Cell 2 DCS-1800 band used Set to "GSM/ PCS 1900" if GSM/ PCS 1900 is used in this test. Otherwise set to "GSM/DCS 1800 Band" ⁴ Allocated BCCH ARFCN of Cell 2 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 RRC State indicator Frequency info - UARFCN uplink (Nu) - UARFCN downlink (Nd) Maximum allowed UL TX power CHOICE Mode Downlink information for each radio links - 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 - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - SCCPCH information for FACH	Same as CELL UPDATE message in step 3 CELL_DCH Reference to TS34.108 clause 5.1 Test frequencies Reference to TS34.108 clause 5.1 Test frequencies 33dBm FDD 100 Not Present Not Present Primary CPICH may be used 0 chips Not Present 2 Reference to TS34.108 clause 6.10 Parameter Set SF-1 (SF is reference to TS34.108 clause 6.10 Parameter Set) No change 0 -a Not Present 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 - 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. 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

8.3.11.4.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 8 the SS shall receive CELL UPDATE message on the old channel of the UTRAN cell with the IE “Cell update cause” set to cause “radio link failure”.

In step 11 the SS shall receive PHYSICAL CHANNEL COMPLETE message.

In step 12 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message with the IE “Inter-RAT change failure cause” set to “physical channel failure”.

CHANGE REQUEST

34.123-1 CR 785 # rev **-** # Current version: **5.7.0**

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 HCS test case 8.3.2.13	
Source:	#	Motorola and Nokia	
Work item code:	#	TEI	Date: # 02/05/04
Category:	#	F	Release: # Rel-5
		<i>Use one of the following categories:</i> 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 .	<i>Use one of the following releases:</i> 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 3GPP TS 25.304, clause 5.2.1.6.4:

>>>>

The timer T_n is implemented for each neighbouring cell. T_n shall be started from zero when one of the following conditions becomes true:

- if $HCS_PRIO_n \neq HCS_PRIO_s$ and
 $Q_{meas,n} > Q_{hcs,n}$

Or

- if $HCS_PRIO_n = HCS_PRIO_s$ and
- for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:
 $Q_{meas,n} > Q_{meas,s} + Q_{offset1_{s,n}}$
- for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:
 $Q_{meas,n} > Q_{meas,s} + Q_{offset2_{s,n}}$
- for all other serving and neighbour cells:
 $Q_{meas,n} > Q_{meas,s} + Q_{offset1_{s,n}}$

T_n for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for TO_n is valid only if the associated timer T_n is still running else TO_n shall be set to zero.

	<<<<<<
	Hence when Tn is not running TOn shall be taken as 0 in H parameter calculations.
Summary of change:	⌘ In table 8.3.2.13-1, calculation of H(During Penalty Time) for Cell B, at T0 and T1, and for Cell C, at T0, is changed from -16 to -4.
Consequences if not approved:	⌘ Incorrect calculation of cell reselection parameters on the SS side.

Clauses affected:	⌘ 8.3.2.13								
Other specs affected:	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </tbody> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X
Y	N								
	X								
	X								
	X								
Other comments:	⌘ Applicable to R99 and later releases								

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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.

8.3.2.13 URA Update: Change of URA due to HCS Cell Reselection

8.3.2.13.1 Definition

8.3.2.13.2 Conformance requirement

1. The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is defined by:

$$H_s = Q_{\text{meas},s} - Q_{\text{hcs}_s}$$

$$H_n = Q_{\text{meas},n} - Q_{\text{hcs}_n} - TO_n * L_n$$

...

2. The cell-ranking criterion R is defined by:

$$R_s = Q_{\text{meas},s} + Q_{\text{hyst}_s}$$

$$R_n = Q_{\text{meas},n} - Q_{\text{offset}_{s,n}} - TO_n * (1 - L_n)$$

where:

$$TO_n = \text{TEMP_OFFSET}_n * W(\text{PENALTY_TIME}_n - T_n)$$

$$L_n = 0 \quad \text{if } \text{HCS_PRIO}_n = \text{HCS_PRIO}_s$$

$$L_n = 1 \quad \text{if } \text{HCS_PRIO}_n <> \text{HCS_PRIO}_s$$

$$W(x) = 0 \quad \text{for } x < 0$$

$$W(x) = 1 \quad \text{for } x \geq 0$$

TEMP_OFFSET_n applies an offset to the H and R criteria for the duration of PENALTY_TIME_n after a timer T_n has started for that neighbouring cell. The timer T_n is implemented for each neighbouring cell. T_n shall be started from zero when one of the following conditions becomes true:

- if $\text{HCS_PRIO}_n <> \text{HCS_PRIO}_s$ and

$$Q_{\text{meas},n} > Q_{\text{hcs}_n}$$

Or

- if $\text{HCS_PRIO}_n = \text{HCS_PRIO}_s$ and
 - for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH RSCP in the serving cell, and:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + Q_{\text{offset}_{s,n}}$$

- for serving FDD and neighbour FDD cells if the quality measure for cell selection and reselection is set to CPICH Ec/No in the serving cell, and:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + \text{Qoffset}_{2,s,n}$$

- for all other serving and neighbour cells:

$$Q_{\text{meas},n} > Q_{\text{meas},s} + \text{Qoffset}_{1,s,n}$$

T_n for the associated neighbour cell shall be stopped as soon as any of the above conditions are no longer fulfilled. Any value calculated for TO_n is valid only if the associated timer T_n is still running else TO_n shall be set to zero.

At cell-reselection, a timer T_n is stopped only if the corresponding cell is not a neighbour cell of the new serving cell, or if the criteria given above for starting timer T_n for the corresponding cell is no longer fulfilled with the parameters of the new serving cell. On cell re-selection, timer T_n shall be continued to be run for the corresponding cells but the criteria given above shall be evaluated with parameters broadcast in the new serving cell if the corresponding cells are neighbours of the new serving cell.

...

3. The cell selection criterion S used for cell reselection is fulfilled when:

for FDD cells:	$S_{\text{rxlev}} > 0$ AND $S_{\text{qual}} > 0$
for TDD cells:	$S_{\text{rxlev}} > 0$
for GSM cells:	$S_{\text{rxlev}} > 0$

Where :

$S_{\text{qual}} = Q_{\text{qualmeas}} - Q_{\text{qualmin}}$
$S_{\text{rxlev}} = Q_{\text{rxlevmeas}} - Q_{\text{rxlevmin}} - P_{\text{compensation}}$

...

4. The UE shall perform ranking of all cells that fulfil the S criterion among
 - all cells that have the highest HCS_PRIO among those cells that fulfil the criterion $H \geq 0$. Note that this rule is not valid when UE high-mobility is detected.
 - all cells, not considering HCS priority levels, if no cell fulfil the criterion $H \geq 0$. This case is also valid when it is indicated in system information that HCS is not used, that is when serving cell does not belong to a hierarchical cell structure.

The cells shall be ranked according to the R criteria.

The best ranked cell is the cell with the highest R value.

5. If an FDD cell is ranked as the best cell and the quality measure for cell selection and re-selection is set to CPICH RSCP, the UE shall perform cell re-selection to that FDD cell.

In all cases, the UE shall reselect the new cell, only if the following conditions are met:

- the new cell is better ranked than the serving cell during a time interval Treselection.
- more than 1 second has elapsed since the UE camped on the current serving cell.

...

6. The *cell reselection* process in Connected Mode is the same as *cell reselection evaluation process* used for idle mode, described in subclause 5.2.6 of 25.304.

7. A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

1> URA reselection:

2> 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

...

3> perform URA update using the cause "change of URA".

Reference

3GPP TS 25.304 clause 5.2.6.1.4

3GPP TS 25.304 clause 5.4.3

3GPP TS 25.331 clause 8.3.1

8.3.2.13.3 Test purpose

1. To confirm that the UE can read HCS related SIB information and act upon all HCS parameters in URA_PCH state.
2. To confirm that the UE executes an URA update procedure after the successful change of URA due to HCS Cell Reselection in URA_PCH state.
3. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

8.3.2.13.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.13-1. Cell2 with URA-ID 1 and Cell 3 with URA-ID 2 are switched off

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, with URA-ID 1 from the list of URA-ID in cell 1

Specific Message Content

For system information blocks 4 and 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.

Contents of System Information Block type 4 (FDD)

Information Element	Value/remark
- Cell selection and re-selection info	FDD
- CHOICE mode	0 dB
- Sintersearch	35 dB
- SsearchHCS	This parameter is configurable
- RAT List	Not Present
- S _{limit,SearchRAT}	-20 dB
- Qqualmin	-115 dBm
- Qrxlevmin	10 (gives actual value of 20 dB)
- Qhyst1s	0 dB
- Qhyst2s	
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD and 1.28 Mcps TDD)

Information Element	Value/remark
- Cell selection and re-selection info	TDD
- CHOICE mode	47 dB
- SsearchHCS	10 (gives actual value of 20 dB)
- Qhyst1s	
- HCS Serving cell information	
-HCS Priority	6
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 1)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
Cell id in system information		1			2			3		
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
HCS Priority		6			7			7		
CPICH Ec (FDD)	dBm /3.84 MHz	-60	-60	-60	-80	-80	-70	-80	-70	-73
H* (During penalty time)		16	16	4	-164	-164	6	-164	-6	3
H* (After PenaltyTime)		16	16	16	-4	-4	6	-4	6	3
P-CCPCH RSCP (TDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After PenaltyTime)		15	15	15	-4	-4	9	-4	3	3
R* (After PenaltyTime)		-41	-41	-41	-60	-60	-47	-60	-53	-53

* this parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. SS configures Cell 2 and 3 with power level given in column "T0", and URA-Id 1 and 2 respectively and starts broadcast of BCCH on the primary CCPCH in cells 2 and 3. UE shall remain camped on the Cell 1 even after expiry of penalty time i.e. 40 seconds. SS sets downlink transmission power settings according to columns "T1" in table 8.3.2.13-1. SS then adjusts the transmission power again according to 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. UE on performing cell reselection to cell 3 finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits URA UPDATE CONFIRM message to the UE on the downlink CCCH. The "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 3 without sending a uplink response message. Next SS adjusts the transmission power according to 'T2' column. UE shall re-select to cell 2, and transmit URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T0' column. UE shall perform cell re-selection to cell 1 and then sent URA UPDATE message to SS. Finally SS shall transmit URA UPDATE CONFIRM message to UE on the downlink CCCH. UE shall return to URA_PCH state in Cell 1 and will not transmit anything on PRACH.

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 updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2		←	BCCH	SS configures cell 2 (with URA-ID 1) and Cell 3 (with URA-ID 2) and power levels as given in column T0 of table 8.3.2.13-1 and starts transmission of BCCH.
3				UE shall Remain camped on Cell 1 and in URA_PCH state even after expiry of Penalty time.
4				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.13-1.
5		→	URA UPDATE	The UE shall perform a cell reselection first after the penalty time to cell 3 and when it finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6		←	URA UPDATE CONFIRM	Message sent on CCCH.
7				SS set the power transmission of all cells according to column 'T2' of table 8.3.2.13-1.
8		→	URA UPDATE	In Cell 2
9				SS do not respond to the URA UPDATE message from UE and set the power transmission of all cells according to column 'T0' of table 8.3.2.13-1.
10		→	URA UPDATE	In Cell 1
11		←	URA UPDATE CONFIRM	Message sent on CCCH.

Specific Message Contents

The contents of system information block 4 and 11 messages are identical as system information block 4 and 11 messages as found in 34.108 clause 6.1 with the following exceptions:

Contents of System Information Block type 4 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintersearch	0 dB
- SsearchHCS	35 dB
- RAT List	This parameter is configurable
- S _{limit,SearchRAT}	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

Contents of System Information Block type 4 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell selection and re-selection info	
- CHOICE mode	TDD
- SsearchHCS	47 dB
- Qhyst1s	10 (gives actual value of 20 dB)
- HCS Serving cell information	
-HCS Priority	7
- Q HCS	39 (results in actual value of -76)
- TcrMax	Not Present

Contents of System Information Block type 11 (FDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 11 (FDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency measurement system information	
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	2
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	7
- Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	1
- Cell info	
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Maximum allowed UL TX power	33 dBm
- HCS neighbouring cell information	Present
- HCS_Priority	6
- Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 11 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 3)

Information Element	Value/remark
- SIB 12 indicator	FALSE
- Measurement control system information	
- Use of HCS	used
- Intra-frequency cell info list	
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20 dB
- HCS neighbouring cell information	Present
- HCS_Priority	6
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	TDD
- Primary CCPCH info	
- Cell parameters ID	Reference clause 6.1 Default settings for cell
- Primary CCPCH TX power	Not Present
- Timeslot list	Not Present
- Burst type	Not Present
- Cell Selection and Re-selection info	
- Qoffset _{1s,n}	-20dB
- HCS neighbouring cell information	Present
- HCS_Priority	7
-Q_HCS	39 (results in actual value of -76)
-HCS Cell Reselection Information	
- Penalty Time	40
-Temporary Offset	12
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Steps 6 and 11)

Use the same message sub-type found in TS 34.108 clause 9.

8.3.2.13.5 Test requirement

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

CR-Form-v7	
CHANGE REQUEST	
⌘ 34.123-1 CR 786 ⌘ rev - ⌘ Current version: 5.7.0 ⌘	

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 P2 RRC test case 8.2.4.4	
Source:	⌘	Motorola	
Work item code:	⌘	TEI	Date: ⌘ 02/05/04
Category:	⌘	F	Release: ⌘ Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		F (correction)	2 (GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96 (Release 1996)
		B (addition of feature),	R97 (Release 1997)
		C (functional modification of feature)	R98 (Release 1998)
		D (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘	Initial state of CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH, can be set up by directly moving the UE to Cell DCH state or moving first to Cell FACH and then Cell DCH. If UE is moved directly to Cell DCH (which is the case in ETSI TTCN), then Cell Update Confirm message contents in step 4 cannot be defined as 'Same as RADIO BEARER SETUP message used to move to initial condition'. This definition sets IEs 'Timing indicator as Maintain', 'Default DPCH Offset Value as Not Present' which are not valid in this case.
Summary of change:	⌘	In specific message contents of Cell Update Confirm message in comments field, text 'Set to the same values as for "Packet to CELL_DCH from CELL_FACH in PS"' is replaced by '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" '
Consequences if not approved:	⌘	Test as specified is incorrect and also not aligned with TTCN

Clauses affected:	⌘	8.2.4.4				
Other specs	⌘	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N					
<input type="checkbox"/>	<input checked="" type="checkbox"/>					

affected:	<input checked="" type="checkbox"/>	Test specifications	34.123-3
	<input checked="" type="checkbox"/>	O&M Specifications	
Other comments: ⌘ Applicable to R99 and later releases.			

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.

8.2.4.4 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.

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 E _c (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 RECONFIGURATION 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

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_FACH in PS"
Downlink information for each radio link list	Set to the same values as for "Packet to CELL_DCH from CELL_FACH 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 UplinkDPCH Info	CELL_DCH Same as RADIO BEARER SETUP message used to move to initial condition 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	Same as RADIO BEARER SETUP message used to move to initial condition 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" Same as RADIO BEARER SETUP message used to move to initial condition

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 Uplink DPCH timeslots and codes	CELL_DCH 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 initial 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".

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 787** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 P4 RRC UTRAN to GERAN Cell Reselection test cases		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/04
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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:	⌘ <ol style="list-style-type: none"> The Initial conditions for these test cases in UMTS are PS-DCCH+DTCH_FACH (State 6-11) or URA_PCH (state 6-13) or CELL_PCH (State 6-12). The presence of PICS statement 'UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs', is not necessary and misleading. It has to be replaced by 'UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH' In test case 8.3.9.5, to verify UE has released Resources in UTRAN cell, Paging Type 2 message must be send to the UE in Cell_FACH state. The UE is expected to respond to paging by sending an upper layer message, not RRC Connection Request.
Summary of change:	⌘ <ol style="list-style-type: none"> In Related ICS/IXIT statement clause 'UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs', is replaced by 'UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH' Test case 8.3.9.5, step h is re-written.
Consequences if not approved:	⌘ Test as specified is incorrect.

Clauses affected:	⌘ 8.3.9.1, 8.3.9.3 & 8.3.9.5										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications Test specifications O&M Specifications	⌘ 34.123-3
Y	N										
	X										
X											
	X										

Other comments: ⌘ Applicable to R99 and later releases

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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.

8.3.9.1 Cell reselection if cell becomes barred or $S < 0$; UTRAN to GPRS (CELL_FACH)

8.3.9.1.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.1.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).
2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH. When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:
 - 1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:
 - 2> initiate the establishment of a connection to the target radio access technology according to its specifications.
 3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:
 - 1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.1.3 Test purpose

1. To verify that the UE performs reselection from UTRAN to GPRS in the state CELL_FACH on the following occasions:
 - Serving cell becomes barred.
 - $S < 0$ for serving cell.
2. To verify when the UE has succeeded in reselecting a cell in the target radio access technology and has initiated the establishment of a connection, it shall release all UTRAN specific resources.

8.3.9.1.4 Method of test

Initial conditions

System Simulator: 3 cells – Cell 1 is UTRAN FDD, Cell 2 is GPRS and Cell 3 is GSM. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2. 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 3.

All cells belong to the same PLMN and location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS) and Cell 3 (GSM).

The 3G Neighbour Cell Description of Cell 2 (GPRS) and Cell 3 (GSM) refers to Cell 1 (UTRAN).

UE: PS-DCCH+DTCH_FACH (State 6-11) 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 [Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH](#) [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,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-75
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	25
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Parameter	Unit	Cell 3 (GSM)
Test Channel		2
RF Signal Level	dBm	-85
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	15
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	S	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	DB	-101 -> -41
Srxlev*	DB	41 -> -19

Test procedure

- a) The SS activates cells 1, 2, and 3. The SS monitors cells 1, 2 and 3 for random access requests from the UE.
- b) The UE is switched on.
- c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11).
- d) The SS sets Cell 1 to be barred.
- e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.
- f) The SS waits for channel request from the UE to establish a Temporary Block flow.
- g) The SS pages the UE with PAGING TYPE 2 in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.
- h) The UE is switched off.
- i) Step a-e) is repeated with the same initial conditions except that in step d), $Q_{rxlevmin}$ is increased, so S will become negative instead of being barred.

8.3.9.1.5 Test Requirements

In step f), the UE shall respond on Cell 2

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 2 after $Q_{rxlevmin}$ is increased.

<Next Modified Section>

8.3.9.3 Cell reselection if $S < 0$; UTRAN to GPRS (UE in CELL_FACH fails to complete an inter-RAT cell reselection)

8.3.9.3.1 Definition

8.3.9.3.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.3.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_FACH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.3.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 9 is GPRS with PBCCH. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN)

UE: PS-DCCH+DTCH_FACH (State 6-11) in cell 1 (UTRAN) 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 [Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH](#) 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.

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Treselection _s	s	5
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
GPRS_RXLEV_A CCESS_MIN	dBm	-100
C1*	dBm	20
C32*	dB	20
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	41-> -19

Step f:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-41-> -101
Srxlev*	dB	-19 -> 41

Test procedure

- a) The SS activates cells 1 and 9. The SS monitors cells 1 and 9 for random access requests from the UE.
- b) The UE is switched on.
- c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11).
- d) The SS increases $Q_{rxlevmin}$, so S will become negative.
- e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.
- f) The SS decreases $Q_{rxlevmin}$, so S will become positive (After the expiry of the timer $T_{reselection}$)
- g) SS calls for generic procedure C.2 in cell 1 (UTRAN) to check that UE is in CELL_FACH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure

Specific Message Contents

Contents of System Information Block type 11 (FDD)

Use the same message type found in clause 6 of TS 34.108, with the following exceptions:

- FACH measurement occasion info	
- fACH-meas-occasion-coeff	
- inter-freq-FDD-meas-ind	
- inter-freq-TDD-meas-ind	
- inter-RAT-meas-ind	
- RAT-Type	

3
FALSE
FALSE
GSM

8.3.9.3.5 Test Requirements

In step f, the UE remains in CELL_FACH in cell 1.

<Next Modified Section>

8.3.9.5 Successful Cell Reselection with RAU – Q_{offset} value modification; UTRAN to GPRS (CELL_FACH)

8.3.9.5.1 Definition

8.3.9.5.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).
2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

- 1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:
 - 2> initiate the establishment of a connection to the target radio access technology according to its specifications.
3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:
 - 1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.5.3 Test purpose

To verify that the UE performs reselection correctly considering the Q_{offset} value broadcast in SIB 11.

8.3.9.5.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, 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 and location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS).

The 3G Neighbour Cell Description of Cell 2 (GPRS) refers to Cell 1 (UTRAN).

UE: PS-DCCH+DTCH_FACH (State 6-11) 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 [Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH](#) ~~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,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-70
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	30
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qoffset1 _{s,n}	dBm	20

Step f:

Parameter	Unit	Cell 2 (GPRS)
RF Signal Level	dBm	-70 -> -50
C1*	dBm	30 -> 50

Test procedure

- a) The SS activates cells 1 and 2. The SS monitors cells 1 and 2 for random access requests from the UE.
- b) The UE is switched on.
- c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11).
- d) Q_{offset} value is modified at UTRAN such that it makes the GSM cell look the best.
- e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.
- f) The SS increases signal level on Cell 2 to -50 dBm.
- g) The SS monitors for random access requests from the UE.
- h) The SS pages the UE with PAGING TYPE 2 in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources. ~~The SS pages the UE with PAGING TYPE 1 in cell 1 (UTRAN), if UE does not respond with RRC Connection Request, it means UE has released the UTRAN resources.~~

8.3.9.5.5 Test Requirements

In step g), the UE shall respond on Cell 2 and enter PACKET TRANSFER mode after performing the routing area update procedure.

In step h), the UE shall not respond in UTRAN cell.

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 788** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction to Low Priority RRC Cell Reselection test cases		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘	<ol style="list-style-type: none"> The Initial conditions for these test cases in UMTS are PS-DCCH+DTCH_FACH (State 6-11) or URA_PCH (state 6-13) or CELL_PCH (State 6-12). The presence of PICS statement 'UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs', is not necessary and misleading. It has to be replaced by 'UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH' In Test case 8.3.9.2, if UE didn't release resources in UTRAN cell, on receiving Paging Type 1 in URA_PCH state the UE will respond with a Cell Update message, not RRC Connection Request.
Summary of change:	⌘	<ol style="list-style-type: none"> In Related ICS/IXIT statement clause 'UE supports UTRAN interactive/ background UL: 64kbps, DL: 64 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs', is replaced by 'UE supports Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH' Test case 8.3.9.2, in step g, RRC Connection Request replaced with Cell Update with cause 'Paging Response'.
Consequences if not approved:	⌘	Test as specified is incorrect.

Clauses affected:	⌘	8.3.9.2 & 8.3.9.4										
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications Test specifications O&M Specifications	⌘
Y	N											
	X											
	X											
	X											

Other comments: ⌘ Applicable to R99 and later releases

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8.3.9.2 Cell reselection if cell becomes barred or $S < 0$; UTRAN to GPRS (URA_PCH)

8.3.9.2.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.2.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).
2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall.

- 1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:
 - 2> initiate the establishment of a connection to the target radio access technology according to its specifications.
3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:
 - 1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.2.3 Test purpose

To verify that the UE performs reselection from UTRAN to GPRS in the state URA_PCH on the following occasions:

- Serving cell becomes barred.
- $S < 0$ for serving cell.

8.3.9.2.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN and location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN)

UE: URA_PCH (state 6-13) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- [Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH](#) UE supports ~~UTRAN interactive/ background UL: 128kbps, DL: 128 kbps/PS RAB + uplink:3.4 DL:3.4 kbps SRBs,~~

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	s	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	40 -> -20

Test procedure

- The SS activates cells 1 and 9. The SS monitors cells 1 and 9 for random access requests from the UE.
- The UE is switched on.
- The SS brings the UE to URA_PCH (State 6-13).
- The SS sets Cell 1 to be barred.
- The SS sends Paging Type1 message to UE to inform UE of the modification in the system information.f) The SS waits for channel request from the UE to establish Temporary Block flow
- The SS pages the UE with PAGING TYPE 1 in cell 1 (UTRAN), if UE does not respond with ~~RRC Connection Request~~ [Cell Update with cause 'Paging Response'](#), it means UE has released the UTRAN resources.

h) The UE is switched off.

i) Step a-e) is repeated with the same initial conditions except that in step d), $Q_{rxlevmin}$ is increased, so S will become negative instead of being barred.

8.3.9.2.5 Test Requirements

In step f), the UE shall respond on Cell 9.

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 9 after $Q_{rxlevmin}$ is increased.

<Next Modified Section>

8.3.9.4 Cell reselection if $S < 0$; UTRAN to GPRS (UE in CELL_PCH fails to complete an inter-RAT cell reselection)

8.3.9.4.1 Definition

8.3.9.4.2 Conformance requirement

If the inter-RAT cell reselection fails, the UE shall:

- 1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

References

TS 25.331, clause 8.3.9.4

8.3.9.4.3 Test purpose

To verify if the inter-RAT cell reselection fails before the UE in CELL_PCH succeeds in initiating the establishment of a connection to the GPRS cell, the UE shall:

- resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

8.3.9.4.4 Method of test

Initial conditions

System Simulator: 2 cells – Cell 1 is UTRAN FDD, Cell 9 is GPRS. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 9.

All cells belong to the same PLMN.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GPRS).

The 3G Neighbour Cell Description of Cell 9 (GPRS) refers to Cell 1 (UTRAN).

UE: CELL_PCH (State 6-12) in cell 1 (UTRAN) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- UE supports [Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH](#) ~~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,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Treselection _s	s	5
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 9 (GPRS)
Test Channel		1
RF Signal Level	dBm	-80
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	20
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0
CellBarred		barred

Step d:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-101 -> -41
Srxlev*	dB	41 -> -19

Step f:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	dB	-41 -> -101
Srxlev*	dB	-19-> 41

Test procedure

- The SS activates cells 1 and 9. The SS monitors cells 1 and 9 for random access requests from the UE.
- The UE is switched on.
- The SS brings the UE to CELL_PCH (State 6-12).
- The SS increases Qrxlevmin, so S will become negative.
- The SS sends Paging Type 1 message to UE to inform UE of the modification in the system information.f) The SS decreases Qrxlevmin, so S will become positive (After the expiry of the timer Treselection)
- SS calls for generic procedure C.4 in cell 1 (UTRAN) to check that UE is in CELL_PCH state. The UE resumes the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure

8.3.9.4.5 Test Requirements

In step f, the UE remains in CELL_PCH in cell 1.

CHANGE REQUEST

№ **34.123-1 CR 789** № rev - № Current version: **5.7.0** №

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 P2 RRC test case 8.3.2.4		
Source:	№ Motorola		
Work item code:	№ TEI	Date:	№ 02/05/04
Category:	№ F	Release:	№ Rel-5
	<i>Use <u>one</u> of the following categories:</i> 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 .		<i>Use <u>one</u> of the following releases:</i> 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:	№ Mismatch between step 1c in expected sequence and specific message contents about cause value included in URA Update message.
Summary of change:	№ In Expected Sequence step 1c, changed cause to 'Periodic URA Update', from 'Periodic Cell Update'
Consequences if not approved:	№ Incorrect implementation of the test.

Clauses affected:	№ 8.3.2.4										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; width: 20px;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications № Test specifications O&M Specifications	
	Y	N									
		X									
	X										
	X										
Other comments:	№ Affects R99, REL-4, 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.

8.3.2.4 URA Update: loss of service after expiry of timers T307 and T305

8.3.2.4.1 Definition

8.3.2.4.2 Conformance requirement

When the T305 expires and the UE detects that it is "out of service area" as specified in TS 25.331 subclause 8.5.5.1, the UE shall

1> start timer T307;

...

When the T307 expires, the UE shall:

1> move to idle mode;

1> release all dedicated resources;

1> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;

1> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

1> clear the variable ESTABLISHED_RABS;

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 8.3.1.4.

8.3.2.4.3 Test purpose

1. To confirm that the UE moves to idle mode after the expiry of timer T307, following an expiry of timer T305 when it discovers that it is out of service area.

8.3.2.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.2.4

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 8.3.2.4 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_DCH state. The SS transmits UTRAN MOBILITY INFORMATION message to the UE to change the value of T305. The UE shall respond with UTRAN MOBILITY INFORMATION CONFIRM message. The UE transits to URA_PCH state using the generic procedure P18 in TS 34.108 clause 7.4. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. The SS waits for reception of a periodical URA update in order to know the timing of the T305 in the UE. The SS replies to the received URA UPDATE message with an URA UPDATE CONFIRM message on the downlink CCCH. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that $S < 0$. When the UE detects the expiry of periodic URA updating timer T305 according to the system information, the UE detects that it is out of service area. After the expiry of timer T307, the UE moves to the idle state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.4 so that $S > 0$. SS waits for 5s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0				Initially, the UE is in CELL_DCH state.
0a		←	UTRAN MOBILITY INFORMATION	Include new timers value (see specific message contents).
0b		→	UTRAN MOBILITY INFORMATION CONFIRM	
0c		←→	SS executes procedure P18 (clause 7.4.2.7.2) specified in TS 34.108.	Transit the UE to URA_PCH state. URA-ID 1 shall be in the list of URA-ID.
1			Void	
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"
1c		→	URA UPDATE	IE "URA update cause" shall be set to "periodical cell -URA update".
1d		←	URA UPDATE CONFIRM	

2a			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that the UE detects that it is out of service area.
2b			SS waits (T305+T307) +10% for UE to enter idle mode.
3			Upon the expiry of timer T305, the UE shall search for cell to camp and triggers T307 timer. SS listens to the uplink CCCH to verify that URA UPDATE message is not transmitted.
4			After the expiry of timer T307, the UE enters idle state. SS waits for 5s.
5	←→	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
Scheduling information - PLMN Value tag	- Scheduling info for System Information Type 1 2
Scheduling information - Cell Value tag	- Scheduling info for System Information Type 3 2
Scheduling information - Cell Value tag	- Scheduling info for System Information Type 4 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

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

UTRAN MOBILITY INFORMATION (Step 0a)

Use the same message sub-type found in clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
- T305	5 minutes

UTRAN MOBILITY INFORMATION CONFIRM (Step 0b)

Use the same message sub-type found in clause 9 of TS 34.108.

URA UPDATE (Step 1c)

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'
URA Update Cause	Check to see if set to "periodical URA update"

8.3.2.4.5 Test requirement

After step 0a the UE shall respond with UTRAN MOBILITY INFORMATION CONFIRM message.

After step 2 the UE shall not transmit any URA UPDATE message on the uplink CCCH.

CHANGE REQUEST

34.123-1 CR 790 # rev - # Current version: 5.7.0

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 P2 RRC test case 8.3.2.1		
Source:	# Motorola		
Work item code:	# TEI	Date:	# 02/05/04
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# With Qrxlevmin set to '-81dBm' in SIB3/4, power level of -75 dBm is considered to be low, especially when SS takes considerable time to switch power levels. The UE may temporarily find itself in out of service area when the power level reaches close to Qrxlevmin. If this happens, once UE finds a suitable cell, it shall send an unexpected cell update message with cause of 're-entered service area' which is not expected by the test.
Summary of change:	# Power level changed to -69 dBm/3.84MHz from -75 dBm/3.8 Mhz
Consequences if not approved:	# Test case may intermittently fail a conformant UE

Clauses affected:	# 8.3.2.1										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	Other core specifications Test specifications O&M Specifications	# 34.123-3
Y	N										
	X										
X											
	X										
Other comments:	# Affects R99, REL-4, REL-5.										

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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.

8.3.2.1 URA Update: Change of URA

8.3.2.1.1 Definition

8.3.2.1.2 Conformance requirement

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:

- 1> URA reselection:
 - 2> 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
 - 2> if the list of URA identities in system information block type 2 is empty; or
 - 2> if the system information block type 2 can not be found:
 - ...
 - 3> perform URA update using the cause "change of URA".

When initiating the URA update procedure, the UE shall:

- 1> stop timer T305;
- 1> set the variables `PROTOCOL_ERROR_INDICATOR`, `FAILURE_INDICATOR`, `UNSUPPORTED_CONFIGURATION` and `INVALID_CONFIGURATION` to `FALSE`;
- 1> move to `CELL_FACH` state, if not already in that state;
- 1> set CFN in relation to SFN of current cell according to TS 25.331 subclause 8.5.15;
- 1> in case of a URA update procedure:
 - 2> set the contents of the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;
 - 2> submit the URA 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 URA update procedure the UE shall transmit a URA UPDATE message.

The UE shall set the IEs in the URA UPDATE message as follows:

- 1> set the IE "U-RNTI" to the value of the variable `U_RNTI`;
- 1> set the IE "URA update cause" corresponding to which cause as specified in TS 25.331 subclause 8.3.1.2 that is valid when the URA UPDATE message is submitted to lower layers for transmission;
 - 2> if the value of the variable `PROTOCOL_ERROR_INDICATOR` is `TRUE`:
 - ...
 - 2> if the value of the variable `PROTOCOL_ERROR_INDICATOR` is `FALSE`:
 - 3> if the value of the variable `INVALID_CONFIGURATION` is `TRUE`:
 - ...
 - 3> if the value of the variable `INVALID_CONFIGURATION` is `FALSE`:

4> set the IE "Protocol error indicator" to FALSE.

If the URA UPDATE CONFIRM message:

- 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 U-RNTI"; and
- does not include the IE "New C-RNTI":

the UE shall:

1> transmit no response message.

...

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> check whether it is still in "in service area" (see TS 25.331 subclause 8.5.5.2);

...

1> in case of a URA update procedure:

2> clear any entry for the URA 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 URA update procedure:

3> set the contents of the URA UPDATE message according to TS 25.331 subclauses 8.3.1.3 and 8.5.10;

3> if a URA UPDATE CONFIRM message was received and caused the IE "Reconfiguration" in the variable CIPHERING_STATUS to be set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:

...

3> submit the URA UPDATE message for transmission on the uplink CCCH.

...

The UE shall:

1> if the IE "URA identity" is included in a received message:

- 2> if the IE "RRC State Indicator" is included and set to "URA_PCH":
 - 3> store this URA identity in the variable URA_IDENTITY;
 - 3> after sending a possible message to UTRAN and entering URA_PCH state as specified elsewhere, read system information block type 2 in the selected cell;
 - 3> if the stored URA identity in the variable URA_IDENTITY is not included in the list of URA identities in System Information Block type 2 in the selected cell, 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, a confirmation error of URA identity list has occurred:
 - 4> if no URA update procedure is ongoing:
 - ...
 - 4> if a URA update procedure is ongoing:
 - 5> take actions as specified in TS 25.331 subclause 8.3.1.10.

If the URA UPDATE CONFIRM message causes a confirmation error of URA identity list as specified in TS 25.331 subclause 8.6.2.1 the UE shall:

- 1> check the value of V302; and
- 1> if V302 is smaller or equal than N302:
 - ...
 - 2> set the IEs in the URA UPDATE message according to TS 25.331 subclause 8.3.1.3;
 - 2> submit the URA UPDATE message for transmission on the uplink CCCH;
 - ...

Reference

3GPP TS 25.331 clause 8.3.1.2, 8.3.1.12, 8.6.2.1

8.3.2.1.3 Test purpose

1. To confirm that the UE executes an URA update procedure after the successful change of URA.
2. To confirm that the UE performs an URA update procedure after it detects that SIB 2 is not broadcasted.
3. To confirm that the UE performs an URA update procedure after it detects a confirmation error of URA identity list.

8.3.2.1.4 Method of test

Initial Condition

System Simulator: 2 cells: The URA-ID and transmission power for each cell is shown in Table 8.3.2.1, where the initial condition is shown in column "T0".
 UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 from the list of URA-ID in cell 1.

Test Procedure

Parameter	Unit	Cell 1							Cell 2								
		T0	T1	T2	T3	T4	T5	T6	T7	T0	T1	T2	T3	T4	T5	T6	T7
UTRA RF Channel Number		Ch. 1							Ch. 1								
CPICH Ec	dBm/3.84MHz	-60	-75 <u>69</u>	-60	-	75 <u>69</u>	-60	-	75 <u>69</u>	-60	-	75 <u>69</u>	-60	-75 <u>69</u>	-60		
P-CCPCH RSCP (TDD)	dBm	-60	-75 <u>69</u>	-60	-	75 <u>69</u>	-60	-	75 <u>69</u>	-60	-	75 <u>69</u>	-60	-75 <u>69</u>	-60		
URA ID		URA-ID 1		URA-ID 2					URA-ID 1,3 and 4					no SIB2			

The test begins with the downlink power transmission of both cells set according to 'T0' column in table 8.3.2.1. The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. The SS then adjusts the transmission power again according to the 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 2. Since URA-ID 1 is also broadcasted in cell 2, the UE shall not perform any URA update procedure due to the change of URA. Starting from time 'T2', SS modifies the system information in cell 1, so that URA-ID 2 is the only URA identity in that cell. Next SS adjusts the transmission power according to 'T3' column. UE shall perform a cell reselection to cell 1 and when the UE finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message, which includes the IEs "RRC State Indicator" and IE "URA-ID" to the UE on the downlink CCCH. The IE "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 1 without sending any uplink response message. Next SS adjusts the transmission power according to 'T4' column. UE shall re-select to cell 2 and transmit a URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T5' column. UE shall perform cell reselection to cell 1 and then send a URA UPDATE message to SS. SS shall transmit URA UPDATE CONFIRM message to UE on the downlink CCCH. Starting from time 'T6', SS modifies the system information in cell 2, so that no SIB 2 is sent in that cell. Next the SS adjusts the transmission power according to the 'T7' column. The UE shall re-select to cell 2 and send a URA UPDATE message since no SIB2 is broadcasted in this cell. When the UE receives a URA UPDATE CONFIRM message including a URA identity, the UE will again send a URA UPDATE message. When receiving this last message, the SS shall transmit RRC Connection Release message on downlink CCCH to release the RRC connection.

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 updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2				SS set the power transmission and system information of all cells according to column 'T1' of table 8.3.2.1.
3				UE shall perform a cell reselection but shall not transmit URA UPDATE message with the update cause of "change of URA".
3a				Starting from time 'T2', SS modifies the system information in cell 1, so that URA-ID 2 is the only URA identity in that cell
4				SS set the power transmission and system information of all cells according to column 'T3' of table 8.3.2.1.
5		→	URA UPDATE	The UE shall perform a cell reselection first and when it finds that its current URA-ID 1 is not in the newly broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6		←	URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set to "URA_PCH", and also IE "URA Identity" equal to "URA-ID 2".
7				SS set the power transmission and system information of all cells according to column 'T4' of table 8.3.2.1.
8		→	URA UPDATE	
9				SS do not respond to the URA UPDATE message from UE and set the power transmission and system information of all cells according to column 'T5' of table 8.3.2.1.
10		→	URA UPDATE	
11		←	URA UPDATE CONFIRM	
11a				Starting from time 'T6', SS modifies the system information in cell 2, so that no SIB 2 is sent in that cell.
12				SS set the power transmission and system informatio of all cells according to column 'T7' of table 8.3.2.1.

13	→	URA UPDATE	The UE shall perform a cell reselection first and when it finds that no URA-ID is broadcasted in this cell, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
14	←	URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set to "URA_PCH", and also IE "URA Identity" equals to "URA-ID 2".
15	→	URA UPDATE	
16	←	RRC CONNECTION RELEASE	This message is sent on CCCH.
17	→	Void	
18			UE enters idle mode

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 2

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exceptions.

Cell 1, time T0-T1:

Information Element	Value/remark
- URA identity list - URA identity	0000 0000 0000 0001B

Cell 2, time T0-T5:

Information Element	Value/remark
- URA identity list - URA identity - URA identity - URA identity	0000 0000 0000 0011B 0000 0000 0000 0001B 0000 0000 0000 0100B

Cell 1, time T2-T7 (step 3a):

Information Element	Value/remark
- URA identity list - URA identity	0000 0000 0000 0010B

Cell 2, time T6-T7 (step 11a):

No SYSTEM INFORMATION BLOCK TYPE 2 is broadcasted in cell 2 during this time period.

URA UPDATE (Step 5, 8, 10, 13, and 15)

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	Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6, 11 and 14)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 2

8.3.2.1.5 Test requirement

After step 2 the UE shall not transmit a URA UPDATE message with update cause "change of URA".

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs.

After cell reselection, the UE shall move to CELL_FACH state and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs.

After cell reselection, the UE shall move to CELL_FACH state and a transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 9 the UE shall find the new cell and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

After step 12 the UE shall find that no URA-ID is broadcasted in the cell, move to CELL_FACH state and transmit a URA UPDATE message setting the update cause to "change of URA".

After step 14 the UE shall find that no URA-ID is broadcasted in the cell and transmit a URA UPDATE message setting the update cause to "change of URA".

CHANGE REQUEST

CR-Form-v7

⌘ **34.123-1 CR** 791 ⌘ rev - ⌘ Current version: **5.7.0** ⌘

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 P2 test case 8.4.1.18		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/04
Category:	⌘ F	Release:	⌘ Rel-5
Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:	
F (correction)		2 (GSM Phase 2)	
A (corresponds to a correction in an earlier release)		R96 (Release 1996)	
B (addition of feature),		R97 (Release 1997)	
C (functional modification of feature)		R98 (Release 1998)	
D (editorial modification)		R99 (Release 1999)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: ⌘ In specific message contents of SIB 12 (step 33), Measurement Validity is set as 'All States', and Traffic Volume measurement object list is 'Not Present'.
As per 3GPP TS 25.331 Clause 8.6.7.1:

>>>>>

If the "UE state" is defined as "all states", the UE shall continue the measurement after making a transition to a new state. This scope is assigned for traffic volume measurement type and UE positioning measurement type. For traffic volume measurement type this scope can only be applied by the UE if the IE " traffic volume measurement object" has been included in measurement control information. If the IE " traffic volume measurement object" has not been included in measurement control information, the UE shall not save the measurement control information in variable MEASUREMENT_IDENTITY, but shall send a MEASUREMENT CONTROL FAILURE message to the UTRAN with failure cause "Configuration incomplete".

<<<<<

TS 25.331 does not explicitly specify UE behaviour in CELL_FACH state, if the network fails to include "traffic volume measurement object" in measurement control information of SIB11/12. It is quite possible for a UE not to perform measurements in such a scenario, even if it may not send a Measurement Control Failure message. UE may not send the expected measurement results in step 34 and 37 and fail the test.

Summary of change:	⌘ In specific Message contents for step 33, SIB 12, Traffic Volume Measurement Object List is made 'present' with: UL transport channel identity RACH UL transport channel identity DCH: 1 UL transport channel identity DCH: 5
Consequences if not approved:	⌘ Test as specified may incorrectly fail a conformant UE.

Clauses affected:	⌘ 8.4.1.18								
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ 34.123-3 O&M Specifications ⌘	Y	N		X	X			X
Y	N								
	X								
X									
	X								
Other comments:	⌘ Applicable to R99 and later releases								

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.

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

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

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 Measurement control system information - Use of HCS - Cell selection and reselection quality measure - Intra-frequency measurement system information - Intra-frequency measurement identity - Intra-frequency cell info list - CHOICE intra-frequency cell removal - New intra-frequency cells - Intra-frequency cell id - Cell info - Cell individual offset - Reference time difference to cell - Read SFN indicator - CHOICE mode - Primary CPICH info - Primary scrambling code - Primary CPICH Tx power - TX Diversity indicator - Cells for measurement - Intra-frequency measurement quantity - Intra-frequency reporting quantity for RACH reporting - Maximum number of reported cells on RACH - Reporting information for state CELL_DCH - Inter-frequency measurement system information - Inter-RAT measurement system information - Traffic volume measurement system information - Traffic volume measurement ID - Traffic volume measurement object list - UL transport channel identity - UL transport channel identity - UL transport channel identity - Traffic volume measurement quantity - Traffic volume reporting quantity - RB buffer payload - RB buffer payload average - RB buffer payload variance - Traffic volume measurement reporting criteria - Measurement validity - Measurement reporting mode - Measurement report transfer mode - Periodical or event trigger - Report criteria system Information - Reporting amount - Reporting interval	Not Present Not used CPICH RSCP Not Present Remove no intra-frequency cells 1 0 dB Not Present TRUE FDD Set to same code as used for cell 1 Not Present FALSE Not Present Not Present Not Present Not Present Not Present Not Present Not Present 5 Not Present RACH DCH :1 DCH : 5 RLC Buffer Payload True False False Not Present All states Acknowledged Mode Periodical Periodical reporting criteria Infinity 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	Not Present
- 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.

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 792** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 Inter Rat Measurement test cases		
Source:	⌘ Motorola		
Work item code:	⌘ TEI	Date:	⌘ 02/05/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
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	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ 8.4.1.31: For a UE that doesn't require compressed mode, BSIC shall be reported as 'Verified' in the measurement report. 8.4.1.34: In Table 8.4.1.34.4-1, BCCH ARFCN for GSM Cell #3 is specified as 39, but in Measurement Control message of step 8, it is specified as 2.
Summary of change:	⌘ 8.4.1.31: In specific Message contents of step 5 and 6, for a UE which doesn't require compressed mode BSIC status for GSM Cell #2 changed to 'Verified' from 'Not Verified'. 8.4.1.34: In specific message contents of Measurement Control, in step 8, the Cell 3 BCCH ARFCN changed to 39.
Consequences if not approved:	⌘ Test as specified is incorrect

Clauses affected:	⌘ 8.4.1.31 and 8.4.1.34						
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	O&M Specifications					
Other comments:	⌘ Applicable to R99 and later releases						

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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.

8.4.1.31 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 1000 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 Initial 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 <ul style="list-style-type: none"> - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters <ul style="list-style-type: none"> - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP CHOICE UL/DL Mode <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method <ul style="list-style-type: none"> - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters <ul style="list-style-type: none"> - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP CHOICE UL/DL Mode <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method <ul style="list-style-type: none"> - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort 	1 Deactivate Not present GSM Carrier RSSI Measurement Infinity 4 7 Not present undefined 12 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 2.0 1.0 Not Present Not Present Not Present Not Present 2 Deactivate Not present GSM Initial BSIC identification Infinity 4 7 Not present undefined 8 Not present Mode 0 Mode 0 UL&DL or UL-only or DL-only (depends on UE's Measurement capability) SF/2 SF/2 A 2.0 1.0 Not Present Not Present 128 Not Present

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	
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	FALSE
reporting indicator	
- 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	1000
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. (Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	
- 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	Non -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 - Periodic Reporting / Event Trigger Reporting Mode	Acknowledged Mode RLC 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	FALSE
UTRAN estimated quality	GSM
CHOICE system	FALSE
- Observed time difference to to GSM cell reporting indicator	
- 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 (Step 8 and 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
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.

<Next Modified Section>

8.4.1.34 Measurement Control and Report: Inter-RAT measurement, event 3b

8.4.1.34.1 Definition

8.4.1.34.2 Conformance requirement

If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":
 - clear the cell information stored in the variable CELL_INFO_LIST; and
 - mark the position "vacant";
- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
 - update the variable CELL_INFO_LIST as follows:
 - if the IE "Inter-RAT cell id" is received:

- store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and
- mark the position "occupied";
- if the IE "Inter-RAT cell id" is not received:
 - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and
- mark the position as "occupied";

When event 3b is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
 - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
 - 3> if the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED_3B_EVENT:
 - 4> store the inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED_3B_EVENT into that variable;
 - 4> send a measurement report with IEs set as below:
 - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (worst one first);
 - 5> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2 , not taking into account the cell individual offset;
 - 2> if equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED_3B_EVENT:
 - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED_3B_EVENT.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
 - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
 - 3> if any of those BCCH ARFCN is not stored into the variable TRIGGERED_3B_EVENT:
 - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED_3B_EVENT into that variable;
 - 4> send a measurement report with IEs set as below:
 - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (worst one first);
 - 5> set the IE "measured results" and the IE "additional measured results" according to 8.4.2, not taking into account the cell individual offset;

2> if equation 2 below is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED_3B_EVENT:

3> remove that BCCH ARFCN from the variable TRIGGERED_3B_EVENT.

Triggering condition:

Equation 1:

$$M_{Other\ RAT} + CIO_{Other\ RAT} \leq T_{Other\ RAT} - H_{3b} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$ is the measurement quantity for the cell of the other system.

$CIO_{Other\ RAT}$ is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$ is the absolute threshold that applies for the other system in that measurement.

H_{3b} is the hysteresis parameter for event 3b.

Leaving triggered state condition:

Equation 2:

$$M_{Other\ RAT} + CIO_{Other\ RAT} > T_{Other\ RAT} + H_{3b} / 2$$

The variables in the formula are defined as follows:

$M_{Other\ RAT}$ is the measurement quantity for the cell of the other system. $M_{Other\ RAT}$ is expressed in dBm.

$CIO_{Other\ RAT}$ is the cell individual offset for the cell of the other system.

$T_{Other\ RAT}$ is the absolute threshold that applies for the other system in that measurement.

H_{3b} is the hysteresis parameter for event 3b.

Reference

3GPP TS 25.331 clause 8.6.7.3, 14.3.1.2

8.4.1.34.3 Test Purpose

- 1 To confirm that the UE sends MEASUREMENT REPORT message if event 3b is configured, if the estimated quality of the other system is below a given threshold.
- 2 To confirm that the hysteresis and time to trigger behaviours for event 3b are correctly implemented. To confirm that the UE updates the list of inter-RAT cells it stores according to what is ordered in the MEASUREMENT CONTROL messages received from UTRAN.

8.4.1.34.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 4 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 8.4.1.34.4-1

	Parameter	Unit	Cell 1 (GSM)		Cell 2 (GSM)		Cell 3 (GSM)	
			T0	T1	T0	T1	T0	T1
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		-70	-90	-70	-70	-90	-90

The table above illustrate the downlink power to be applied for the cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1" indicates 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 3b is set up in this message, and if the UE requires compressed mode (refer ICS/IXIT), compressed mode is activated. The monitored GSM cells at measurement establishment are GSM cells 1 and 2.

At instant T1, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.34.4-1.

When the MEASUREMENT REPORT has been received by the SS, a MEASUREMENT CONTROL message is sent to the UE, to add GSM cell 3 to the monitored GSM cells.

A second MEASUREMENT REPORT triggered by event 3b shall be received shortly after by the SS. 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 3b in the UE. If the UE requires compressed mode (refer ICS/IXIT), 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 tables 8.4.1.34.4-1.
7		→	MEASUREMENT REPORT	After about 0.8 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8		←	MEASUREMENT CONTROL	SS adds GSM cell 3 to the list of the monitored GSM cells.
9		→	MEASUREMENT REPORT	After about 0.8 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
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 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	1
- TGPSI	Deactivate
- TGPS Status Flag	Not present
- TGCFN	
- 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	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 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	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	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	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event triggered
- Periodic Reporting / Event Trigger Reporting Mode	
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=2
- 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 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	3b
- Threshold own system	Not included
- W	Not included
- Threshold other system	-80
- Hysteresis	2
- Time to Trigger	60 ms
- Reporting cell status	Report cells within active set or within virtual active set or of the other RAT
- Maximum number of reported cells	3
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 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 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 it is set to 0.
- 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 3b
- 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.

MEASUREMENT CONTROL (Step 8)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Not present
- Periodic Reporting / Event Trigger Reporting Mode	Not present
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 (1 to <MaxCellMeas>)	MaxCellMeas=1
- inter-RAT cell id	Not present
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	239
- Cell for measurement	Not present
- inter-RAT measurement quantity	Not present
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to <maxMeasEvent>)	Not Present
Physical channel information elements	Not present

MEASUREMENT REPORT (Step 9)

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 three 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 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 0 or 2.
- Observed time difference to GSM cell	Check that the IE is not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 0 or 2 and that this inter-RAT cell id is different from the two previous inter-RAT cell id.
- 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 3b
- 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 2.

8.4.1.34.5 Test requirement

Between instants T0 and T1, the UE shall not send any MEASUREMENT REPORT message to the SS.

Event 3b shall be triggered in the UE (i.e. the transmission of the first MEASUREMENT REPORT message shall begin) after instant T1.

After the reception by the UE of the second MEASUREMENT CONTROL message, the UE shall begin to transmit the second MEASUREMENT REPORT message (since the signal strength for GSM cell 3 is below the threshold for triggering event 3b).

3GPP TSG-T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

Tdoc # T1-040639

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 793 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Errors correction in section 8.4.1.7A for TDD of TS34.123-1		
Source:	⌘ CCSA		
Work item code:	⌘ LCR TDD	Date:	⌘ 20/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 8.4.1.7A.4, the description is not exact. 2. In Expected Sequence in In 8.4.1.7A.4, step 8 should not happen. 3. In Table 8.4.1.7A-1, the PCCPCH RSCP of cell 3 should be higher to trigger event 1g 4. In 8.4.1.7A.5, the Test Requirement is not exact.
Summary of change:	⌘	1. In 8.4.1.7A.4, the description is changed to be more exact. 2. In Expected Sequence in In 8.4.1.7A.4, step 8 is changed to be void. 3. In Table 8.4.1.7A-1, the PCCPCH RSCP of cell 3 is changed so as to be higher to trigger event 1g 4. In 8.4.1.7A.5, the Test Requirement is changed to be more exact.
Consequences if not approved:	⌘	The test case will not executed rightly.

Clauses affected:	⌘	8.4.1.7A								
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> </table> Other core specifications	Y	N					⌘	
	Y	N								
		Test specifications								
		O&M Specifications								
Other comments:	⌘									

8.4.1.7A Measurement Control and Report: Intra-frequency measurement for transition from CELL_FACH to CELL_DCH state (TDD)

8.4.1.7A.1 Definition

8.4.1.7A.2 Conformance requirement

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);
 - 2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11):
 - 3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

...

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> 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> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
 - ...
 - 4> for any other measurement type:
 - 5> replace the corresponding information 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> resume the measurements according to the new stored measurement control information.
 - 3> otherwise:
 - ...
 - 2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:
 - 3> leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.
- 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.

Reference

3GPP TS 25.331, clause 8.4.1.3, 8.4.1.6a and 8.4.1.7.1

8.4.1.7A.3 Test Purpose

1. To confirm that UE retrieves each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;
2. To confirm that UE resumes the measurement reporting if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH".
3. To test that UE continues 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) if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY
4. To confirm that UE sends the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" is fulfilled if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11).

8.4.1.7A.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11).

Test Procedure

Table 8.4.1.7A-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 column marked as "T1" will be applied during the test.

Table 8.4.1.7A-1

Para-meter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
PCCPCH RSCP	dBm	-74	-74	-64	-69	-6955	-122

The UE is initially in CELL_FACH state in cell 1. SS sends [System Information Blocks 11 and 12 including measurement identity 10 for Cell 2 and event 1g](#). Then SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.

SS send a RADIO BEARER RECONFIGURATION message to UE, 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. The UE shall send a MEASUREMENT REPORT message containing IE "Measured results" to report cell 2's PCCPCH RSCP value and IE "event results" to report triggering of event type "1g".

After receiving the MEASUREMENT REPORT message, SS transmits a MEASUREMENT CONTROL message with only cell 3 included in the IE "intra-frequency cell info". After receiving this message, the UE shall transmit another set of MEASUREMENT REPORT message for measurement [identity 11](#). SS verifies that only measurement readings for cell 3 's PCCPCH RSCP are report in IE "cell measured results" in these message. Cell 3 shall also trigger event 1g for the measurement that the UE had stored from system information.

SS reconfigures the downlink according to values "T1" and sends new System Information Blocks 11 and 12.

SS sends PHYSICAL CHANNEL RECONFIGURATION message. 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. SS waits and checks the uplink RACH to confirm that no MEASUREMENT REPORT messages are received.

SS transmits then a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL_DCH. The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS. 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 measurement configured through the MEASUREMENT CONTROL message, 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.

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to move it to CELL_FACH once again. The UE shall move to that state and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS. SS transmits MEASUREMENT CONTROL message on the downlink DCCH, to configure intra-frequency measurements with validity CELL_DCH. SS waits, and verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH.

SS sends RADIO BEARER RECONFIGURATION message and configures dedicated physical channels. The UE shall return to CELL_DCH state, transmit a RADIO BEARER RECONFIGURATION COMPLETE message. The UE shall also send a MEASUREMENT REPORT message to the SS triggered by cell 2.

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to move it to CELL_FACH. The UE shall move to that state and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to SS. SS shall wait and check that no MEASUREMENT REPORT messages are detected on the uplink DCCH.

SS transmits a RADIO BEARER RECONFIGURATION message to the UE, to move it to CELL_DCH. The UE shall move to that state, and transmit a RADIO BEARER RECONFIGURATION COMPLETE message to SS. 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 a step before, instead of the ones that are broadcast in SIB12.

Following the reception of the MEASUREMENT REPORT message, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12. Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH. After this requirement is satisfied, SS sends MEASUREMENT CONTROL on the downlink DCCH once more. This message is identical to the one sent in a step before. A MEASUREMENT REPORT message shall be received from the UE triggered by cell 2.

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". Measurement identity 10 is included for event 1g and cell2.
2		←	SYSTEM INFORMATION CHANGE INDICATION	
3		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
4		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
5		→	MEASUREMENT REPORT	Reports cell 2's PCCPCH RSCP measurement value. Event 1g for cell 2 is triggered.
6		←	MEASUREMENT CONTROL	Cell 3 is added to the list of monitored set of the UE. Measurement identity 11 is included for event 1g and cell3.
7		→	MEASUREMENT REPORT	Cell 3 shall trigger the event 1g configured in the measurement identity 11.
8		→void	MEASUREMENT REPORT	Cell 2 shall also trigger the event 1g configured in the measurement identity 10.
9		←	System Information Block type 11 and 12	System Simulator reconfigures the downlink transmission power settings for cells according to Table 8.4.1.7A-1
10		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
11		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
12				SS waits and checks that no MEASUREMENT REPORT messages are sent by UE.
13		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
14		→	RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state
15		→	MEASUREMENT REPORT	UE shall report cell 2's PCCPCH RSCP measurement value
16		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels
17		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state
18		←	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.
19				SS waits and verifies that no MEASUREMENT REPORT messages are sent by UE.

Step	Direction		Message	Comment
	UE	SS		
20	←		RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
21	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state.
22	→		MEASUREMENT REPORT	UE reports cell 2's measured results for PCCPCH RSCP.
23	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels
24	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state
25				SS waits and check that no MEASUREMENT REPORT messages are sent by the UE.
26	←		RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels
27	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state
28	→		MEASUREMENT REPORT	UE shall have retrieved and resumed the measurement set up through the MEASUREMENT CONTROL of step 18.
29	←		MEASUREMENT CONTROL	Terminate all the intra-frequency measurement and reporting activities related to "measurement identity" = 12.
30				SS waits and verifies that UE stop transmitting MEASUREMENT REPORT messages.
31	←		MEASUREMENT CONTROL	This message is the same as in step 18
32	→		MEASUREMENT REPORT	UE shall transmit a MEASUREMENT REPORT message triggered by cell 2.

Specific Message Content

Master Information Block (Step 1)

Information Element	Value/Remarks
MIB Value Tag	3

System Information Block type 11 for cell 1 (Step 1)

Information Element	Value/remark
SIB12 indicator	TRUE
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
- Cell parameters Id	Refer to clause titled "Default settings for cell No.1 (TDD)" in clause 6.1.4 of TS34.108
- 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	Not present
reporting	
- 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 for cell 1 (Step 1)

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	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	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.2 (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	
- Filter Coefficient	Not present
- CHOICE mode	TDD
- Measurement quantity list	
- Measurement quantity	
- Intra-frequency reporting quantityfor RACH reporting	PCCPCH RSCP 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	TDD
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	TDD
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1g
- Reporting range	Not present
- CHOICE Mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.2 (TDD)" in clause 6.1.4 of TS 34.108
- W	Not present
- Hysteresis	0 dB
- 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
- 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 2)

Information Element	Value/Remarks
BCCH modification info - MIB Value Tag - BCCH modification time	3 Not Present

RADIO BEARER RECONFIGURATION (Step 3, Step 13, Step 20, Step 26)

Use the same message type found in TS34.108, with condition set to A4.

MEASUREMENT REPORT (Steps 5 and 22)

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 CCPCH Info	Check to see if it's the same for cell 2
- PCCPCH RSCP	Check to see if this IE is absent
- 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 '1g'
- Cell measurement event results	
- Cell parameters Id	Check to see if it's the same for cell 2

MEASUREMENT CONTROL (Step 6)

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	Event Trigger
Mode	
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	TDD
- Primary CCPCH Info	Set to same as used for cell 3
- Cells selection and Re-selection info	Not Present
- Cells for measurement	
- Intra-frequency cell id	3
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	TDD
- Measurement quantity list	
- Measurement quantity	PCCPCH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	TRUE
- Proposed TGSN Reporting required	FALSE
- PCCPCH 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	1g
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	TDD
- Primary CCPCH Info	Set to the same for cell 3
- W	Not Present
- Hysteresis	0 dB
- 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

MEASUREMENT REPORT (Step 7)

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	
- Primary CCPCH Info	Check to see if it's the same for cell 3
- Proposed TGSN Reporting required	Check to see if this IE is present
- PCCPCH RSCP reporting indicator	Check to see if this IE is absent
- 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 it's set to 'Intra-frequency measurement event results'
Event Results	
- CHOICE event result	Check to see if this IE is set to '1g'
- Intra-frequency event identity	
- Cell measurement event results	Check to see if it's the same for cell 3

MEASUREMENT REPORT (Step 8)

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 CCPCH Info	Check to see if it's the same for cell 2
Proposed TGSN Reporting required	Check to see if this IE is absent
PCCPCH RSCP reporting indicator	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 it's set to 'Intra-frequency measurement event results'
CHOICE event result	Check to see if this IE is set to '1g'
Intra-frequency event identity	
Cell measurement event results	Check to see if it's the same for cell 2

System Information Block type 11 for cell 1 (Step 9)

Information Element	Value/remark
SIB12 indicator	TRUE
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
- Cell parameters Id	Refer to clause titled "Default settings for cell No.1 (TDD)" in clause 6.1.4 of TS34.108
- 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	Not present
reporting	
- 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 for cell 1 (Step 9)

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	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	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.2 (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	
- Filter Coefficient	Not present
- CHOICE mode	TDD
- Measurement quantity list	
- Measurement quantity	
- Intra-frequency reporting quantity for RACH reporting	PCCPCH RSCP
- 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	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	TDD
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE
- CHOICE mode	TDD
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1g
- Reporting range	Not present
- Cells forbidden to affect reporting	Not present
- CHOICE Mode	TDD
- Primary CCPCH Info	Refer to clause titled "Default settings for cell No.2 (TDD)" in clause 6.1.4 of TS 34.108
- W	Not present
- Hysteresis	0 dB
- 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
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Steps 10, 16, 23)

Use the same message sub-type found in TS 34.108, which is entitled "Packet to CELL_FACH from CELL_DCH in PS".

MEASUREMENT CONTROL (Steps 18 and 31)

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	Event Trigger
Mode	
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	TDD
- Primary CCPCH Info	Set to same as used for cell 2
- Cell selection and Re-selection info	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- CHOICE mode	TDD
- Measurement quantity list	
- Measurement quantity	PCCPCH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	FALSE
- Proposed TGSN Reporting required	FALSE
- PCCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting	FALSE
indicator	
- Cell identity reporting indicator	TRUE
- Proposed TGSN Reporting required	FALSE
- PCCPCH 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	1g
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- Primary CCPCH Info	Set to the same for cell 2
- W	Not Present
- Hysteresis	0 dB
- 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

MEASUREMENT REPORT (Steps 22, 28 and 32)

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	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	
- Primary CCPCH Info	Check to see if it's the same for cell 2
- Proposed TGSN Reporting required	Check to see if this IE is absent
- PCCPCH RSCP reporting indicator	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 it's set to 'Intra-frequency measurement event results'
Event Results	
- CHOICE event result	Check to see if this IE is set to '1g'
- Intra-frequency event identity	
- Cell measurement event results	
- Cell parameters Id	Check to see if it's the same for cell 2

MEASUREMENT CONTROL (Step 29)

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

8.4.1.7A.5 Test Requirement

After step ~~34~~ the UE shall report cell 2's PCCPCH RSCP value by transmitting MEASUREMENT REPORT messages.

After step ~~56~~ the UE shall transmit ~~two~~ MEASUREMENT REPORT ~~messages which~~ contain measured results of cell 3's PCCPCH 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~~ 14, 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 PCCPCH RSCP value.

After step ~~15-18~~ the UE shall ~~stop measurement activities pertaining to periodic reporting of cell 2's PCCPCH RSCP~~, no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH.

After step ~~17~~ 21, the UE shall transmit a MEASUREMENT REPORT message to the SS as specified in the MEASUREMENT CONTROL message received in step ~~17~~ 18.

After step ~~21-24~~ no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH.

~~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~~27, the UE shall transmit a MEASUREMENT REPORT message to the SS as specified in the MEASUREMENT CONTROL message received in step 18.

~~the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.~~

After step ~~25-29~~ no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH. ~~the UE shall report cell 1 and 3's PCCPCH RSCP value by transmitting MEASUREMENT REPORT messages.~~

After step 31 the UE shall transmit MEASUREMENT REPORT messages, containing measured results of cell 2's PCCPCH RSCP value.

3GPP TSG-T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

Tdoc # T1-040640

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 794 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Errors correction in section 8.4.1.29 of TS34.123-1
Source:	⌘ CCSA
Work item code:	⌘ LCR TDD Date: ⌘ 20/04/2004
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: Use <u>one</u> of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900 . Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ Some errors should be modified: 1. In 8.4.1.29.2, TCTV (Transport Channel Traffic Volume) not TCTF should be used. 2. In 8.4.1.29.4, the description “clause 6.11.5.4.5.2 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRBs for DCCH for UL(for 1.28Mcps TDD)” is more exact.
Summary of change:	⌘ 1. In 8.4.1.29.2, TCTF should be changed to TCTV (Transport Channel Traffic Volume). 2. In 8.4.1.29.4, the description for 1.28Mcps TDD should be changed to “clause 6.11.5.4.5.2 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRBs for DCCH for UL(for 1.28Mcps TDD)”.
Consequences if not approved:	⌘ The test case will not be executed correctly.

Clauses affected:	⌘ 8.4.1.29								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px; text-align: center;">Y</td> <td style="width: 20px; height: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>	Y	N					Other core specifications	⌘
	Y	N							
Test specifications	⌘								
O&M Specifications	⌘								
Other comments:	⌘								

8.4.1.29 Measurement Control and Report: Event based Traffic Volume measurement in CELL_FACH state.

8.4.1.29.1 Definition

8.4.1.29.2 Conformance requirement

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.

...

For traffic volume measurements in the UE only one quantity is compared with the thresholds. This quantity is Transport Channel Traffic Volume (which equals the sum of Buffer Occupancies of RBs multiplexed onto a transport channel) in number of bytes. Every TTI, UE measures the Transport Channel Traffic Volume for each transport channel and compares it with the configured thresholds. If the monitored Transport Channel Traffic Volume exceeds an absolute threshold, i.e. if $TCTV > \text{Reporting threshold}$, this is an event (event 4a) that could trigger a report. The corresponding report specifies at least which measurement ID the event that triggered the report belongs to.

In CELL_FACH 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 traffic volume measurement or UE positioning measurement that is being performed in the UE;
- 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 14.4.2.1, 3GPP TS 25.331, clause 8.4.1.3, 8.4.2.2.

8.4.1.29.3 Test Purpose

1. To verify that in CELL_FACH state when event 4a triggered at TVM set up UE sends Measurement Report with correct measurement identity and indication of UL transport channel type, radio bearer identities and corresponding RLC buffer payloads in number of bytes.
2. To verify that in CELL_FACH state when event 4a triggered after TVM set up UE sends Measurement Report with correct measurement identity and indication of UL transport channel type, radio bearer identities and corresponding RLC buffer payloads in number of bytes.
3. To confirm that the UE sends MEASUREMENT REPORT message, with measurement report in IE "Measurement results on RACH" as specified in System Information Block type 12.

8.4.1.29.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (State 3 or State 7) as specified in clause 7.4 of TS 34.108.

System Information Block type 11 or 12 does not include Traffic Volume measurement system information.

Test Procedure

The UE is brought to the CELL_FACH state after a successful incoming call attempt. The SS follows the procedure in TS 34.108 clause 7.1.3 (Mobile Terminated), to set up a user RAB, but with the default RAB replaced by the one described in 34.108, clause 6.10.2.4.3.2 (for FDD) or clause 6.11.5.4.4.2 (for 1.28 Mcps TDD): Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH for DL and 6.10.2.4.4.1:

Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH (for FDD) or ~~clause 6.11.5.4.5.1: SRB for CCCH + SRB for DCCH (for 1.28 Mcps TDD) for UL~~ [clause 6.11.5.4.5.2 Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRBs for DCCH for UL \(for 1.28 Mcps TDD\)](#). The radio bearer is placed into UE test loop mode 1 described in 34.109 clause 5.3. The System Information Block type 12 is modified compared to the default settings so that CPICH RSCP (for FDD) or P-CCPCH RSCP (for TDD) is reported for intra-frequency reporting when transmitting RACH messages. After this modification, SS configures transport channel traffic volume so as to exceed threshold and then sends to UE MEASUREMENT CONTROL message, which includes traffic volume measurement control parameters e.g. uplink transport channel type and reporting threshold. Transport channel traffic volume exceeds threshold and after 'time to trigger' UE sends MEASUREMENT REPORT to SS. SS does not respond and after 'pending time after trigger' UE sends the same MEASUREMENT REPORT again. SS configures UE's transport channel load decreases to zero and UE sends no MEASUREMENT REPORT message. SS configures transport channel traffic volume so as to exceed threshold again and after 'time to trigger' UE sends MEASUREMENT REPORT message to SS. After 'pending time after trigger' UE sends again same MEASUREMENT REPORT message. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE1	The SS transmits the message, which includes a allocated identity (P-TMSI).
1a		→	RRC CONNECTION REQUEST	
1b		←	RRC CONNECTION SETUP	
1c		→	RRC CONNECTION SETUP COMPLETE	
1d		→	SERVICE REQUEST	
1e		←	AUTHENTICATION AND CIPHERING REQUEST	
1f		→	AUTHENTICATION AND CIPHERING RESPONSE	
1g		←	SECURITY MODE COMMAND	
1h		→	SECURITY MODE COMPLETE	
1i		←	ACTIVATE RB TEST MODE	TC
1j		→	ACTIVATE RB TEST MODE COMPLETE	
1k		←	RADIO BEARER SETUP	RRC RAB SETUP See specific message contents for this message
1l		→	RADIO BEARER SETUP COMPLETE	
1m		←	CLOSED UE TEST LOOP	TC UE Test Loop Mode1
1n		→	CLOSED UE TEST LOOP COMPLETE	TC
1o		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 12	System Information Block type 12 is different from the default settings (see specific message contents)
1p		←	SYSTEM INFORMATION CHANGE INDICATION	To notify the modification of SYSTEM INFORMATION BLOCK TYPE 12, this message is transmitted.
1q				SS configures transport channel traffic volume so as to exceed threshold.
2		←	MEASUREMENT CONTROL	SS provides Traffic Volume measurement criterias to UE.
3		→	MEASUREMENT REPORT	UE reports that Traffic Volume measurement event 4A is triggered.
4		→	MEASUREMENT REPORT	UE repeats message after 1100 ms.
4a				SS configures UE's transport channel load decreases to zero
4b				SS receive no MEASUREMENT REPORT message.
4c				SS configures transport channel traffic volume so as to exceed threshold
4d		→	MEASUREMENT REPORT	UE reports that Traffic Volume measurement event 4A is triggered.
4e		→	MEASUREMENT REPORT	UE repeats message after 1100 ms.
5		↔	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 Content

PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	CN identity Terminating Call with one of the supported services PS Domain P-TMSI Allocated identity during the attach procedure. Not Present
CHOICE Used paging identity	
- Paging cause	
- CN domain identity	
- CHOICE UE Identity	
- p-TMSI	
BCCH modification info	Not Present

RRC CONNECTION REQUEST (Step 1a)

Information Element	Value/remark
Message type	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Initial UE identity	
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 1
Protocol Error Indicator	Check to see if it is set to FALSE
Measured results on RACH	Not checked.

System Information Block type 12 (Step 1o)(FDD)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

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	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	Not Present
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- CHOICE mode	FDD
- 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
- 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	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 set cells	Not present
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Intra-frequency measurement reporting criteria
- CHOICE report 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 virtual 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 12 (Step 1o)(1.28 Mcps TDD)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
FACH measurement occasion info	Not Present
Measurement control system information	Not used
- Use of HCS	CPICH RSCP
- Cell selection and reselection quality measure	5
- Intra-frequency measurement system information	Remove no intra-frequency cells
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	0 dB
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	FALSE
- Intra-frequency cell id	TDD
- Cell info	1.28 Mcps TDD
- Cell individual offset	Set to same Cell parameters ID as used for cell 1
- Reference time difference to cell	Not Present
- Read SFN Indicator	Not Present
- CHOICE mode	Not Present
- Primary CCPCH Info	Not present
- CHOICE TDD option	Not Present
- Cell parameters ID	Not Present
- Primary CCPCH TX power	Not Present
- Timeslot list	Not present
- Cell selection and Re-selection info	Not Present
- Intra-frequency Measurement quantity	Not Present
- Filter Coefficient	TDD
- CHOICE mode	P-CCPCH RSCP
- Measurement quantity	No report
- Intra-frequency measurement for RACH reporting	TDD
- SFN-SFN observed time difference	P-CCPCH RSCP
- CHOICE mode	Current cell
- Reporting quantity	FALSE
- Maximum number of reported cells on RACH	FALSE
- Reporting information for state CELL_DCH	TDD
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	FALSE
- Cell synchronisation information reporting indicator	TDD
- Cell identity reporting indicator	FALSE
- CHOICE mode	FALSE
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN reporting indicator	FALSE
- Primary CCPCH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	FALSE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TDD
- CHOICE mode	FALSE
- Timeslot ISCP reporting indicator	FALSE
- Proposed TGSN reporting indicator	FALSE
- Primary CCPCH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected set cells	Not present
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Intra-frequency measurement reporting criteria
- CHOICE report criteria	1g
- Parameters required for each event	Not Present
- Intra-frequency event identity	Not Present
- 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	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	60 ms

<ul style="list-style-type: none"> - Amount of reporting - Reporting interval - Reporting Cell Status - CHOICE reported cell 	Infinity 16 seconds Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
<ul style="list-style-type: none"> - Maximum number of reported cells - Inter-frequency measurement system information - Traffic volume measurement system information 	2 Not Present Not Present

MASTER INFORMATION BLOCK (Step 1o)

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

Information Element	Value/remark
MIB Value tag	2

SYSTEM INFORMATION CHANGE INDICATION (Step 1p)

Information Element	Value/remark
Message Type	
BCCH modification info	
MIB Value Tag	2
BCCH Modification time	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	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Traffic volume measurement
- Traffic volume measurement object	
- Uplink transport channel type	RACH
- Traffic volume measurement quantity	
- Measurement quantity	RLC buffer payload
- 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	
- UE state	All states except CELL_DCH
CHOICE report criteria	Traffic volume measurement reporting criteria
- Parameters sent for each transport channel	
- Parameters required for each event	
- Traffic volume event identity	4a
- Reporting threshold	8
- Time to trigger	100
- Pending time after trigger	1000
- Tx interruption after trigger	250

MEASUREMENT REPORT (Step 3, step 4, step 4d and step 4e)(FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB Identity	1
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	2
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	3
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	4
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	20
- RLC Buffers Payload	Check to see if the value is above the threshold
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
Measured Results on RACH	
- Measurement result for current cell	
- CHOICE mode	Check to see if set to 'FDD'
- CHOICE measurement quantity	Check to see if set to 'CPICH RSCP'.
- CPICH RSCP	Checked to see if this IE is absent
- Measurement results for monitored cells	
- CHOICE mode	Check to see if set to 'FDD'
- CHOICE measurement quantity	Check to see if set to 'CPICH RSCP'.
- CPICH RSCP	Checked to see if this IE is present and the value is within an acceptable range
Additional Measured results	Not checked
Event Results	
CHOICE event result	Check to see if set to 'Traffic volume measurement event results'
- Uplink transport channel type causing the event	Check to see if set to "RACH"
- UL transport channel identity	Check to see that is not set
- Traffic volume event identity	Check to see if set to "4a"

MEASUREMENT REPORT (Step 3, step 4, step 4d and step 4e)(TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB Identity	1
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	2
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	3
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	4
- RLC Buffers Payload	Check to see if this IE is present
- Average of RLC Buffer Payload	Check to see if this IE is absent

- Variance of RLC Buffer Payload	Check to see if this IE is absent
- RB Identity	20
- RLC Buffers Payload	Check to see if the value is above the threshold
- Average of RLC Buffer Payload	Check to see if this IE is absent
- Variance of RLC Buffer Payload	Check to see if this IE is absent
Measured Results on RACH	
- Measurement result for current cell	
- CHOICE mode	Check to see if set to 'TDD'
- Primary CCPCH RSCP	Checked to see if this IE is absent
- Measurement results for monitored cells	
- CHOICE mode	Check to see if set to 'TDD'
- Primary CCPCH RSCP	Checked to see if this IE is present and the value is within an acceptable range
Additional Measured results	Not checked
Event Results	
CHOICE event result	Check to see if set to 'Traffic volume measurement event results'
- Uplink transport channel type causing the event	Check to see if set to "RACH"
- UL transport channel identity	Check to see that is not set
- Traffic volume event identity	Check to see if set to "4a"

8.4.1.29.5 Test Requirement

In step 3 UE sends MEASUREMENT REPORT with correct measurement identity indication. RB identity and RLC buffers payload has reasonable values. The IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP (for FDD) or P-CCPCH RSCP (for TDD) shall be included in this message.

In step 4, 4d and 4e UE repeats message sent in step 3.

After step 3 UE is not allowed to send user data during the 'Tx interruption after trigger' timer is running.

CHANGE REQUEST

⌘ **34.123-1 CR 795** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ To add the description of "Primary CCPCH info" (for TDD) in 8.1.6.3.		
Source:	⌘ CCSA		
Work item code:	⌘ LCR TDD	Date:	⌘ 15/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	⌘ In 8.1.6.3.4, there is no corresponding description for TDD .
Summary of change:	⌘ In 8.1.6.3.4, "Primary CCPCH info" (for TDD) should be added.
Consequences if not approved:	⌘ The description is not completely.

Clauses affected:	⌘ 8.1.6.3								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>	Y	N					Other core specifications	⌘
Y	N								
		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.

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	Not used
- Use of HCS	CPICH RSCP
- Cell selection and reselection quality measure	5
- Intra-frequency measurement system information	Remove no intra-frequency cells
- Intra-frequency measurement identity	0
- Intra-frequency cell info list	0 dB
- CHOICE intra-frequency cell removal	Not present
- New intra-frequency cells	FALSE
- Intra-frequency cell id	FDD
- Cell info	Set to same code as used for cell 1
- Cell individual offset	Not Present
- Reference time difference to cell	FALSE
- Read SFN Indicator	FDD
- CHOICE mode	Set to same code as used for cell 1
- Primary CPICH Info	Not Present
- Primary Scrambling Code	FALSE
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not present
- Intra-frequency Measurement quantity	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity	No report
- Intra-frequency measurement for RACH reporting	CPICH RSCP
- SFN-SFN observed time difference	Current cell
- Reporting quantity	FALSE
- Maximum number of reported cells on RACH	FALSE
- Reporting information for state CELL_DCH	FALSE
- Intra-frequency reporting quantity	FALSE
- Reporting quantities for active set cells	FALSE
- Cell synchronisation information reporting	TRUE
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	TRUE
- Cell synchronisation information reporting	TRUE
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 set cells	Not present
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Intra-frequency measurement reporting criteria
- CHOICE report criteria	1a
- Parameters required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	15 dB
- Triggering condition 2	Not Present
- Reporting Range Constant	0.0
- Cells forbidden to affect reporting range	1.0 dB
- W	Not Present
- Hysteresis	0
- 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	Report cells within active and/or monitored set on used
- CHOICE reported cell	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	FALSE
indicator	
- Cell identity reporting indicator	FALSE
- PCCPCH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting	TRUE
indicator	
- 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	Event trigger
Mode	
- 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.

CR-Form-v7	CHANGE REQUEST
⌘ 34.123-1 CR 796 ⌘ rev - ⌘ Current version: 5.7.1 ⌘	

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:	⌘ To add the description of "Primary CCPCH info" (for TDD) in 8.2.6.8.		
Source:	⌘ CCSA		
Work item code:	⌘ LCR TDD	Date:	⌘ 15/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 8.2.6.8.4, there is no corresponding description for TDD .
Summary of change:	⌘ In 8.2.6.8.4, "Primary CCPCH info" (for TDD) should be added.
Consequences if not approved:	⌘ The description is not completely.

Clauses affected:	⌘ 8.2.6.8								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>	Y	N					Other core specifications	⌘
	Y	N							
		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.

8.2.6.8 Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.6.8.1 Definition

8.2.6.8.2 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 CELL_FACH state, the UE shall, after the state transition:

- 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> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 2> initiate a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";
 - 2> when the cell update procedure completed successfully:
 - 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> use the transport format set given in system information;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
 - 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

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.

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, 8.3.1.7.

8.2.6.8.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after the UE completes a cell update procedure.

8.2.6.8.4 Method of test

Initial Condition

System Simulator: 1 cell.

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, which includes IE "Primary CPICH info" [\(for FDD\)](#) or ["Primary CCPCH info" \(for TDD\)](#) and no dedicated physical channel information to invoke the UE to transit from CELL_DCH to CELL_FACH. As the UE cannot detect the specified cell, the UE shall initiate the cell update procedure. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PHYSICAL CHANNEL RECONFIGURATION	This message include IE "Primary CPICH info" for FDD and Primary CCPCH info for TDD.
3			Void	
4		→	CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	See message content.
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CPICH info - Primary scrambling code	150

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	4

CELL UPDATE (Step 4)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Annex A for FDD and Annex A for TDD with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

8.2.6.8.5 Test requirement

After step 3 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 5 UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.

After step 6 UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

3GPP TSG-T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

Tdoc # T1-040644

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 797 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Errors correction in section 8.3.1.4.4 of TS34.123-1
Source:	⌘ CCSA
Work item code:	⌘ LCR TDD Date: ⌘ 20/04/2004
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: Use <u>one</u> of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900 . Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ Two values should be modified according to the definition in 25.331: 1. 'infintiy' is not one choice of the values of 't305' 2. 'periodical cell updating' is not one choice of cell update causes.
Summary of change:	⌘ 1. The value of "t305" should be 'infinity' according to the clause 10.3.3.43 of 25.331. 2. 'periodical cell updating' should be changed into 'periodical cell update' according to the clause 10.3.3.3 of 25.331.
Consequences if not approved:	⌘ The description will not be exact according to the definition in 25.331.

Clauses affected:	⌘ 8.3.1.4												
Other specs affected:	<table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">Y</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">N</td> <td style="padding: 2px;">Other core specifications</td> <td style="width: 20px;">⌘</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;"> </td> <td style="border: 1px solid black; padding: 2px; text-align: center;"> </td> <td style="padding: 2px;">Test specifications</td> <td></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;"> </td> <td style="border: 1px solid black; padding: 2px; text-align: center;"> </td> <td style="padding: 2px;">O&M Specifications</td> <td></td> </tr> </table>	Y	N	Other core specifications	⌘			Test specifications				O&M Specifications	
Y	N	Other core specifications	⌘										
		Test specifications											
		O&M Specifications											
Other comments:	⌘												

8.3.1.4.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2 are active.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.1.4

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	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.3.1.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE starts from CELL_PCH state. When the UE detects the expiry of periodic cell updating timer T305 according to the system information, the UE moves to CELL_FACH state. It shall transmit a CELL UPDATE message on the uplink CCCH and set the value "periodical cell update" into IE "Cell update cause". SS answers with a CELL UPDATE CONFIRM message on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "infinity", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH" on the downlink CCCH. Then UE shall enter CELL_PCH state. SS then monitors the uplink CCCH for a period of 60 minutes (ideally the SS should monitor this up to the maximum possible value for timer T305 (720 minutes), but for practical reasons 60 minutes (twice default timer of 30 minutes) is regarded as being sufficient) and verifies that no CELL_UPDATE message is received. SS then configures its downlink transmission power settings according to columns "T0" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 1 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. Next, SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "5", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH" on the downlink CCCH. Then UE shall enter CELL_PCH state. 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 on the downlink CCCH to end the procedure.

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_PCH state. SS waits until T305 has expired. Wait for CELL UPDATE message and then verify that the time of arrival of this message is in the range of T305 value +/- 10 % after it entered CELL_PCH state
2		→	CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "periodical cell update".
3		←	CELL UPDATE CONFIRM	
3a		→	UTRAN MOBILITY INFORMATION CONFIRM	
4		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to 'infintiy' 'infinity'.
5		→	UTRAN MOBILITY INFORMATION CONFIRM	
6				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.4.
7		→	CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
8		←	CELL UPDATE CONFIRM	UE enters CELL_PCH state after receiving this message.
9				SS waits for 60 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
10				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.4.
11		→	CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
12		←	CELL UPDATE CONFIRM	

Step	Direction		Message	Comment
	UE	SS		
12 a		→	UTRAN MOBILITY INFORMATION CONFIRM	
13		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to '5'.
14		→	UTRAN MOBILITY INFORMATION CONFIRM	
15				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.4.
16		→	CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
17		←	CELL UPDATE CONFIRM	UE enters CELL_PCH state after receiving this message.
18				SS wait for T305 timer to expire
19		→	CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell update".
20		←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2 and 19)

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' Check to see if set to '0000 0000 0000 0000 0001' Check to see if set to 'periodical cell updating update'

CELL UPDATE (Step 7, 11 and 16)

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' Check to see if set to '0000 0000 0000 0000 0001' Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3 and 12)

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, 17 and 20)

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_PCH
UTRAN DRX cycle length coefficient	3

UTRAN MOBILITY INFORMATION (Step 4 and 13)

Use the same message sub-type found in TS 34.108 clause 9, 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 - T305	Set to 'infinity' in step 4 and '5' in step 13

8.3.1.4.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, it shall then move to CELL_FACH state and transmits a CELL UPDATE message with the IE "Cell update cause" set to "periodical cell update".

After step 3, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 4, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 8 and before step 10, the UE shall not transmit any CELL UPDATE messages.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 13, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 15, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 18 the UE shall transmit a CELL UPDATE message stating the cell update cause to be periodic updating.

3GPP TSG-T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

Tdoc # T1-040645

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 798 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Errors correction in section 8.4.1.2a of TS34.123-1		
Source:	⌘ CCSA		
Work item code:	⌘ LCR TDD Date: ⌘ 20/04/2004		
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%; vertical-align: top;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%; vertical-align: top;"> Use <u>one</u> 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) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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)
F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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:	⌘ These errors should be modified: <ol style="list-style-type: none"> 1. In Expected Sequence in 8.4.1.2A.4, the step number should be continued. 2. In System Information Block type 11 (Step 1) in 8.4.1.2A.4, the IE name of PCCPCH is not aligned with 25.331. 3. In MEASUREMENT CONTROL (Step 7) in 8.4.1.2A.4, some IE value are not correct. 4. In MEASUREMENT REPORT (Step 9) in 8.4.1.2A.4, some IE value are not correct. 5. In MEASUREMENT REPORT (Step 10) in 8.4.1.2A.4, some IE value are not correct. 6. In 8.4.1.2A.5, the use of CPICH RSCP for TDD is not correct.
Summary of change:	⌘ These changes should be made: <ol style="list-style-type: none"> 1. In Expected Sequence in 8.4.1.2A.4, the step number of 12 and 13 should be changed to 10 and 11 to keep continued. 2. In System Information Block type 11 (Step 1) in 8.4.1.2A.4, the IE name of PCCPCH should be changed to Primary CCPCH Info. 3. In MEASUREMENT CONTROL (Step 7) in 8.4.1.2A.4, some IE values are changed. 4. In MEASUREMENT REPORT (Step 9) in 8.4.1.2A.4, some IE values are changed. 5. In MEASUREMENT REPORT (Step 10) in 8.4.1.2A.4, some IE values are changed. 6. In 8.4.1.2A.5, the use of CPICH RSCP is changed to PCCPCH RSCP.
Consequences if not approved:	⌘ The description will not be exact according to the definition in 25.331.

Clauses affected:	⌘	8.4.1.2a											
Other specs affected:	⌘	<table border="1"><thead><tr><th>Y</th><th>N</th></tr></thead><tbody><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></tbody></table>	Y	N							Other core specifications	⌘	
		Y	N										
		Test specifications											
		O&M Specifications											
Other comments:	⌘												

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.
42 10	→	MEASUREMENT REPORT	SS monitors the uplink DCCH to make sure that only 1 such message is received almost immediately after step 44 9. This message shall not contain IE "Inter-frequency cell measured results"
43 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
- PCCPCH	Refer to clause titled "Default settings for cell No.4 (TDD)" in clause 6.1.4 of TS 34.108
- TX Diversity Indicator	FALSE
- Cell selection and re-selection info	Not present For neighbouring 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	
- 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
- 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	FALSE
indicator	
- 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	
- 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
- 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
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
- 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	FALSE
- 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
UE Autonomous update mode	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	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	
- 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 "Intra inter -frequency measurement event results"
- Inter-frequency event identity	Check to see if this IE is set to "2c"
- Inter-frequency cells	
- Frequency info	
- UARFCN	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	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~~CPICH~~ 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.

CHANGE REQUEST

34.123-1 CR 801 # rev **-** # Current version: **5.7.1**

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 in Security Mode Command for 8.1.7.1 and 8.1.7.2 test cases.		
Source:	# Sasken Communication Technologies Limited, MCC Task 160		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	# As per 3GPP TS 25.331 clause 8.1.12.2.1: "When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering configurations (keyset and algorithm) per CN domain, in total over all radio bearers at any given time. For signalling radio bearers the total number of ciphering configurations that need to be stored is at most three" Also per clause 8.1.12.2.2: "When configuring Integrity protection, UTRAN should: 1> ensure that the UE needs to store at most three different Integrity protection configurations (keysets) at any given time. This includes the total number of Integrity protection configurations for all signalling radio bearers And also in the same clause, a bit down it emphasises that if an Integrity activation is pending on an RB, the same activation time is to be used. Based on all such references the best way to avoid such unwanted situations where Integrity and Ciphering Pending activations can exceed than UTRAN is allowed for in TTCN, is to set the Integrity and Ciphering Activation times for all RB's except RB2 same as the existing RRC/RLC Sequence numbers. The Integrity activation for RB2 shall also be immediately as the SMC is to be transmitted with new configuration, and Ciphering Activation shall be RLC Sequence number +2, assuming the SMC will atmost take 2 RLC PDU's. It should be noted that in TTCN implementations for all tests except (RAB) where ciphering/Integrity can be activated, virtually nothing is transmitted on RAB's. Very few messages are transmitted on SRB1, 4 and 0. Hence the sequence numbers in TTCN are non conformant with 34.123-1" 3GPP TTCN is implemented as per the proposed Change.
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Summary of change: ⌘	<ol style="list-style-type: none"> 1) Changed the RLC sequence number for RB Identities 1,3 and 4 to Current RLC SN in Security Mode Command at Step 6 for 8.1.7.1 and at Step 8 for 8.1.7.2. 2) Changed the RLC sequence number for RB 2 to Current RLC SN + 2 in Security Mode Command at Step 6 for 8.1.7.1 and at Step 8 for 8.1.7.2. 3) Changed the RLC sequence number for RB 20 to Current RLC SN in Security Mode Command at Step 8 for 8.1.7.2. 4) Changed the RRC sequence number for RB 0 to 4 to Current RRC SN in Security Mode Command at Step 6 for 8.1.7.1 and at Step 8 for 8.1.7.2. 5) At Step 9 of the expected sequence of the test case 8.1.7.2 in the Security Mode Complete message added a check to see if the mobile is sending RLC Sequence number for RB 20.
Consequences if not approved:	⌘ Conformant UE will not be tested properly.

Clauses affected:	⌘ 8.1.7.1.4, 8.1.7.2.4														
Other specs affected:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> <table style="display: inline-table; vertical-align: middle; margin-left: 10px;"> <tr> <td style="vertical-align: top;">Other core specifications</td> <td style="vertical-align: top;">⌘</td> </tr> <tr> <td style="vertical-align: top;">Test specifications</td> <td style="vertical-align: top;">34.123-1</td> </tr> <tr> <td style="vertical-align: top;">O&M Specifications</td> <td></td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘	Test specifications	34.123-1	O&M Specifications	
Y	N														
	X														
X															
	X														
Other core specifications	⌘														
Test specifications	34.123-1														
O&M Specifications															
Other comments:	⌘														

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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.

8.1.7.1 Security mode command in CELL_DCH state (CS Domain)

8.1.7.1.1 Definition

8.1.7.1.2 Conformance requirement

1. This procedure is used to trigger or start of ciphering or to command the restart of ciphering with the new ciphering configuration for the signalling radio bearers and any radio bearers of a particular CN Domain. It is also used to start integrity protection or modify integrity protection configuration for the signalling radio bearers.
2. When the UE receives a SECURITY MODE COMMAND message from the UTRAN, which indicates a downlink activation time for each effected SRB and RB, and new ciphering mode configuration, the UE shall apply the old ciphering configuration, for a particular SRB or RB, before the stated downlink activation time. It shall start to decipher using the new ciphering configuration at the downlink activation time.
3. After the UE has transmitted a SECURITY MODE COMPLETE message using the new integrity protection configuration which includes uplink activation time, it shall start to cipher transmission in the uplink using the new configuration at the respective uplink activation time for each SRB or RB.

Reference

3GPP TS 25.331 clauses 8.1.12, 8.6.3.4, 8.6.3.5.

8.1.7.1.3 Test purpose

To confirm that the UE activates the new ciphering configurations after the stated activation time. To confirm that after the UE receives a SECURITY MODE COMMAND message, it transmits a SECURITY MODE COMPLETE message to the UTRAN using the old ciphering configuration together with the application of the new integrity protection configuration. To confirm that UE send SECURITY MODE FAILURE message when SS transmits a SECURITY MODE COMMAND message that causes an invalid configuration. To confirm that the UE sends a SECURITY MODE FAILURE message when the UE receives an invalid SECURITY MODE COMMAND message.

8.1.7.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_DCH (state 6-9) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_DCH state. The SS initiates an Authentication procedure, which will result in the generation of a new security keyset (CK/IK). The SS transmits a SECURITY MODE COMMAND message which contains an unexpected critical message extension. The UE shall respond by sending SECURITY MODE FAILURE message on the DCCH. Then SS transmits a SECURITY MODE COMMAND message with IE's "Ciphering mode info" and "Integrity protection mode info both omitted". Again the UE shall not trigger any ciphering algorithm and it shall respond by sending SECURITY MODE FAILURE message on the DCCH. Next, the SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE. Then the UE shall check the integrity check info and shall start to configure ciphering in downlink according to the first valid SECURITY MODE COMMAND message. The UE shall transmit a SECURITY MODE COMPLETE message which contains the correct uplink activation times and also "Integrity check info" IE using the new integrity protection configuration. The SS records the uplink ciphering activation time for RB 2. Next, the SS transmits UE CAPABILITY ENQUIRY message repeatedly on the downlink DCCH using RLC-AM mode. The UE shall respond to each downlink message with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM. SS then send UE CAPABILITY INFORMATION CONFIRM message to the UE. This cycle repeats itself until both the uplink and downlink ciphering activation time for RB 2 has elapsed. SS checks all uplink UE CAPABILITY INFORMATION messages are integrity-protected by UIA algorithm, and that the messages contain the correct values for "Integrity check info" IE. This can be verified in the SS through the reception of a correctly ciphered and integrity-protected UE CAPABILITY INFORMATION message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				RRC connected state on DCH_state.
1a		←	AUTHENTICATION REQUEST	MM message which will result in the generation of a new security keyset
1b		→	AUTHENTICATION RESPONSE	MM
2		←	SECURITY MODE COMMAND	See message content.
3		→	SECURITY MODE FAILURE	IE "Failure Cause" shall be set to "Protocol Error" and IE "Protocol Error Information" shall be set to "Message extension not comprehended".
4		←	SECURITY MODE COMMAND	See message content.
5		→	SECURITY MODE FAILURE	IE "Failure Cause" shall be set to "invalid configuration".
6		←	SECURITY MODE COMMAND	See specific message contents.
7			Void	
8			Void	
9		→	SECURITY MODE COMPLETE	SS verifies that this message is sent using the old ciphering configuration. SS records the uplink ciphering activation time for RB 2.
10		←	UE CAPABILITY ENQUIRY	SS repeats step 10, 11 and 12 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.
11		→	UE CAPABILITY INFORMATION	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.
12		←	UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

SECURITY MODE COMMAND (Step 2)

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. Next RRC SN 'FF'H
RRC Message sequence number	
Critical extensions	

SECURITY MODE FAILURE (Step 3)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink DCCH, with the exception of the following IEs:

Information Element	Value/remark
Failure cause	
Failure cause	Protocol error
Protocol error information	
Protocol error cause	Message extension not comprehended

SECURITY MODE COMMAND (Step 4)

Information Element	Value/remark
RRC transaction identifier	0
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	Not Present
- Ciphering mode command	
Integrity protection mode info	Not Present
CN domain identity	CS Domain

SECURITY MODE FAILURE (Step 5)

The same message found in TS 34.108, clause 9 shall be transmitted by the UE on the uplink DCCH, with the exception of the following IEs:

Information Element	Value/remark
Failure cause	
Failure cause	Invalid configuration

SECURITY MODE COMMAND (Step 6)

~~See notes below for the value of Y.~~

Information Element	Value/remark
RRC transaction identifier	X 0
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	(256+CFN-(CFN MOD 8 + 8))MOD 256
Radio bearer downlink ciphering activation time info	
RB Identity	1
RLC sequence number	Current RLC SN +Y
RB Identity	2
RLC sequence number	Current RLC SN + 4 2
RB Identity	3
RLC sequence number	Current RLC SN +Y
RB Identity	4
RLC sequence number	Current RLC SN +Y
Integrity protection mode info	
Integrity protection mode command	Modify
Downlink integrity protection activation info	
	Current RRC SN for SRB0 +2
	Current RRC SN for SRB1 +2
	Current RRC SN for SRB2 +2
	Current RRC SN for SRB3 +2
	Current RRC SN for SRB4 +2
Integrity protection algorithm	UIA1
CN domain identity	CS Domain

Note — ~~X = 0 (Step 6), and Y = 1 (Step 6)~~

SECURITY MODE COMPLETE (Step 9)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	Checked to see if present. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- RRC Message sequence number	Checked to see if present
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
Radio bearer uplink ciphering activation info	
- RB Identity other than RB2	Check to see if the RLC SN for RB1, 3 and 4 are present
- RB Identity	2
- RLC sequence number	SS records this value. See step 10 in 'expected sequence'

8.1.7.1.5 Test requirement

After step 2 the UE shall transmit a SECURITY MODE FAILURE message to report the protocol error detected in the first SECURITY MODE COMMAND message.

After step 4 the UE shall transmit a SECURITY MODE FAILURE message to report on the invalid configuration detected in the second SECURITY MODE COMMAND message.

After step 8 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 9 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 6) 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 10 and step 12 shall be repeated correctly after activation time on both directions has lapsed and the messages on both direction shall be ciphered and integrity protected..

.....

8.1.7.2 Security mode command in CELL_FACH state

8.1.7.2.1 Definition

8.1.7.2.2 Conformance requirement

1. This procedure is used to trigger the start of ciphering, or to command the restart of ciphering with the new ciphering configuration for the signalling radio bearers and any radio bearers of a particular CN Domain. It is also used to start integrity protection or modify integrity protection configuration for signalling radio bearers.
2. When the UE receives a SECURITY MODE COMMAND message from the UTRAN, which indicates the downlink activation time for each effected SRB and RB, and new ciphering mode configuration, the UE shall apply the old ciphering configuration, for a particular SRB or RB, before the stated downlink activation time. It shall start to decipher using the new ciphering configuration at the downlink activation time.
3. The UE shall transmit SECURITY MODE COMPLETE message using the new integrity protection configuration stated in the received SECURITY MODE COMMAND message. The SECURITY MODE COMPLETE message shall include the ciphering uplink activation time. The UE shall start to apply the new ciphering configuration on the uplink direction, after the uplink activation time has elapsed respectively for each SRB or RB.

Reference

3GPP TS 25.331 clauses 8.1.12, 8.6.3.4, 8.6.3.5.

8.1.7.2.3 Test purpose

To confirm that after the UE receives a SECURITY MODE COMMAND message, it transmits a SECURITY MODE COMPLETE message to the UTRAN using the old ciphering configuration together with the application of the new integrity protection configuration. To confirm that the UE applies the old ciphering configuration in the downlink prior to the activation time; and uses the new ciphering configuration on and after the activation time. To confirm that the UE starts to cipher its uplink transmissions after the uplink activation time stated in SECURITY MODE COMPLETE message is reached. To confirm that the UE sends a SECURITY MODE FAILURE message when the UE receives an invalid SECURITY MODE COMMAND message.

8.1.7.2.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_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 initiates an Authentication and Ciphering procedure, which will result in the generation of a new security keyset (CK/IK). The SS transmits a SECURITY MODE COMMAND message which

contains an unexpected critical message extension. The UE shall respond by sending SECURITY MODE FAILURE message on the DCCH. Next, SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and IE "Integrity check info". The UE shall check the integrity check info. It shall start to configure ciphering in downlink and transmit a SECURITY MODE COMPLETE message, which contains the correct uplink activation times using the new integrity protection configuration. This message shall contain the IE "Integrity check info". SS records the uplink ciphering activation time for RB 2. Next, SS transmits UE CAPABILITY ENQUIRY message repeatedly on the downlink DCCH using RLC-AM mode. The UE shall respond to each downlink message with a UE CAPABILITY INFORMATION message on the uplink DCCH using RLC-AM. SS checks all uplink messages are integrity-protected by UIA1 algorithm, and that the messages contain the correct values for "Integrity check info" IE by sending a UE CAPABILITY INFORMATION CONFIRM. This cycle repeats itself until both the uplink and downlink ciphering activation time for RB 2 have elapsed. After both the uplink and downlink ciphering activation time for RB 2 have passed, the UE shall be able to communicate with the SS using the new ciphering configurations. This can be verified in SS through the reception of a correctly ciphered and integrity-protected UE CAPABILITY INFORMATION message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_FACH state.
1a		←	AUTHENTICATION AND CIPHERING REQUEST	GMM message which will result in the generation of a new security keyset
1b		→	AUTHENTICATION AND CIPHERING RESPONSE	GMM
2		←	SECURITY MODE COMMAND	See specific message content
3		→	SECURITY MODE FAILURE	IE "Failure Cause" shall be set to "Protocol Error" and IE "Protocol Error Information" shall be set to "Message extension not comprehended".
4			Void	
5			Void	
6			Void	
7			Void	
8		←	SECURITY MODE COMMAND	See specific message contents.
9		→	SECURITY MODE COMPLETE	SS verifies that this message is sent using the old ciphering configuration. SS records the uplink ciphering activation time for RB 2.
10		←	UE CAPABILITY ENQUIRY	SS repeats step 10,11 and 12 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.
11		→	UE CAPABILITY INFORMATION	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.
12		←	UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

SECURITY MODE COMMAND (Step 2)

Information Element	Value/remark
Integrity check info Message authentication code RRC Message sequence number Critical extensions	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. Next RRC SN 'FF'H

SECURITY MODE COMMAND (Step 8)

~~See notes below for the value of Y.~~

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info Message authentication code RRC Message sequence number	Calculated result in SS. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. 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 +Y
RB Identity	2
RLC sequence number	Current RLC SN + 4 <u>2</u>
RB Identity	3
RLC sequence number	Current RLC SN +Y
RB Identity	4
RLC sequence number	Current RLC SN +Y
RB Identity	20
RLC sequence number	Current RLC SN +Y
Integrity protection mode info Integrity protection mode command	Modify
Downlink integrity protection activation info	Current RRC SN for SRB0 +2 Current RRC SN for SRB1 +2 Current RRC SN for SRB2 +2 Current RRC SN for SRB3 +2 Current RRC SN for SRB4 +2
Integrity protection algorithm	UIA1
CN domain identity	PS Domain

~~Y=1 (Step 8)~~

SECURITY MODE COMPLETE (Step 9)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Checked to see if present. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
- Message Authentication code	Checked to see if present
- RRC Message sequence number	
Uplink integrity protection activation info	Check to see if it the RRC SN for RB 0 to RB 4 are present
- RRC message sequence number list	
Radio bearer uplink ciphering activation info	Check to see if the RLC SN for RB1, 3 and 4 <u>and 20</u> are present
- RB Identity other than RB2	2
- RB Identity	SS records this value. See step 10 in 'expected sequence'
- RLC sequence number	

8.1.7.2.5 Test requirement

After step 2 the UE shall transmit a SECURITY MODE FAILURE message to report the protocol error detected in the first SECURITY MODE COMMAND message.

After step 8 the SS checks that the SECURITY MODE COMPLETE message is received ciphered using the old configuration and that the calculated MAC-I values in "integrity check info" IE is correct.

After step 9 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 8) 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 10 and step 12 shall be repeated correctly after activation time on both directions has lapsed and the messages on both directions shall be ciphered and integrity protected.

CHANGE REQUEST

⌘ **TS 34.123-1 CR 802** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 TS 34.123-1 R5; Correction to P1 RRC TC 8.4.1.1.		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 30/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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:	⌘ <ol style="list-style-type: none"> 1. Conformance requirement out of date. 2. As IE "Reporting Cell Status" is not defined in System Information Block Type 11/12 for periodic intra-frequency measurements Clause 8.6.7.9 in TS 25.331 states that the UE shall assume the default value "Report cells within active set and/or monitored set on used frequency ". But TS 25.331 is not clearly defining what will happen when all the reporting quantities are set to FALSE for an Active set cell. At steps 6 and 6a in the expected sequence a UE might because of this include the Cell measured results for Cell 1 (as this cell is in the active set).
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Conformance requirement updated. 2. At steps 6 and 6a in the expected sequence the specific message contents is changed to also take care of the IE Cell measured results for Cell 1 if it is present.
Consequences if not approved:	⌘ TC will fail a conformant UE.

Clauses affected:	⌘ TC 8.4.1.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	X	X	⌘	TS 34.123-3 (TTCN code)
Y	N										
X	X										
X	X										
X	X										

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

8.4.1.1 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 transitioned 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.

~~Upon transition from idle mode to CELL_DCH state, the UE shall:~~

~~1> begin or continue monitoring the list of 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);~~

~~1> if the "intra frequency measurement reporting criteria" IE was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11):~~

~~2> begin measurement reporting according to the IE.~~

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.~~

~~—the first measurement has been completed for a newly initiated measurement with periodic reporting; or~~

~~—the time period indicated in the stored IE "Periodical reporting criteria" has elapsed since the last measurement report was submitted to lower layers for a given measurement; or~~

~~—an event in stored IE "Measurement reporting criteria" was triggered.~~

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:~~if more than one 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:
 - 4> ~~for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:~~
 - ...
 - 4> ~~for any other measurement type:~~
 - ...
 - 2> for any other measurement type:
 - 3> resume the measurements according to the new stored measurement control information.
 - 5> ~~replace the corresponding information 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> ~~resume the measurements according to the new stored measurement control information.~~
 - 3> otherwise:
 - 4> ~~set the variable CONFIGURATION_INCOMPLETE to TRUE.~~
 - 2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:
 - 3> ~~leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.~~
 - 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.
 - 1> ~~if the IE "measurement command" has the value "release":~~
 - ...
 - 1> ~~clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;~~

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". ~~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.~~

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.
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.

Step	Direction		Message	Comment
	UE	SS		
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 - Intra-frequency cell info list - CHOICE intra-frequency cell removal - New intra-frequency cells - Intra-frequency cell id - Cell info - Cell individual offset - Reference time difference to cell - Read SFN Indicator - CHOICE Mode - Primary CPICH Info - Primary Scrambling Code - Primary CPICH TX power - TX Diversity Indicator - Cell selection and Re-selection - Intra-frequency cell id - Cell info - Cell individual offset - Reference time difference to cell - Read SFN Indicator - CHOICE Mode - Primary CPICH Info - Primary Scrambling Code - Primary CPICH TX power - TX Diversity Indicator - Cell selection and Re-selection info - Reporting information for state CELL_DCH - Intra-frequency reporting quantity - Reporting quantities for active set cells - Cell synchronisation information reporting indicator - Cell identity reporting indicator - CHOICE mode - CPICH Ec/No reporting indicator - CPICH RSCP reporting indicator - Pathloss reporting indicator - Reporting quantities for monitored set cells - Cell synchronisation information reporting indicator - Cell identity reporting indicator - CHOICE mode - CPICH Ec/No reporting indicator - CPICH RSCP reporting indicator - Pathloss reporting indicator - Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode - CHOICE report criteria - Amount of reporting - Reporting interval	Not Present Absence of this IE is equivalent to default value 1 Not present (This IE shall be ignored by the UE for SIB11) 1 Not present Absence of this IE is equivalent to default value 0 dB Not Present TRUE FDD Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108 Not Present FALSE Not Present (The IE shall be absent as this is the serving cell) 2 Not present Absence of this IE is equivalent to default value 0dB 1024 TRUE FDD Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108 Not Present FALSE Not present For neighbouring cell, if HCS is not used and all the parameters in cell selection and re-selection info are Default value, this IE is absent. FALSE FALSE FDD FALSE FALSE FALSE FALSE FALSE FDD FALSE TRUE FALSE Acknowledged mode RLC Periodical reporting Periodic reporting criteria Infinity 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	Check to see if it's the same code for cell 1 (if present)
- Primary Scrambling Code	Check to see if this IE is absent
- 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

<ul style="list-style-type: none"> - Reporting deactivation threshold - Replacement activation threshold - Time to trigger - Amount of reporting - Reporting interval - Reporting cell status - CHOICE reported cell 	<p>Not Present Not Present 0 ms Infinity Not Present</p>
<ul style="list-style-type: none"> - Maximum number of reported cells 	<p>Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency 3</p>
<p>DPCH compressed mode status info</p>	<p>Not Present</p>

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 Measured Results <ul style="list-style-type: none"> - CHOICE measurement - Intra-frequency measurement results <ul style="list-style-type: none"> - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH Info <ul style="list-style-type: none"> - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH Info <ul style="list-style-type: none"> - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH Info <ul style="list-style-type: none"> - Primary Scrambling Code - CPICH Ec/No - CPICH RSCP - Pathloss Measured Results on RACH Additional Measured Results Event Results <ul style="list-style-type: none"> - CHOICE event result <ul style="list-style-type: none"> - Intra-frequency event identity - Cell measured event results - CHOICE mode <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	Check to see if set to 1 Check to see if set to "Intra-frequency measured results list" Check to see if measurement results for 3 cells are included (the order in which the different cells are reported is not important) (for cell 1) Check to see if it is absent Check to see if it is absent. Check to see if it's the same code for cell 1 Check to see if this IE is present Check to see if this IE is present Check to see if this IE is absent (for cell 2) Check to see if it is absent Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it. Check to see if it's the same code for cell 2 Check to see if this IE is absent Check to see if this IE is present Check to see if this IE is absent (for cell 3) Check to see if it is absent Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it. Check to see if it's the same code for cell 3 Check to see if this IE is absent Check to see if this IE is present Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is absent Check to see if this IE is set to "Intra-frequency measurement event results" Check to see if this IE is set to "1e" Check to see if this IE is set to "FDD" 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.

CR-Form-v7

CHANGE REQUEST

⌘ **TS34.123-1 CR 803** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ Add HCR TDD content of Inter-frequency measurement for event 2A		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘	1. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘	In Clause 8.4.1.24: 1) In "Test Procedure", Table 8.4.1.24-1 is updated; 2) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 3) "Test Requirement" is updated; 4) Editorial changes
Consequences if not approved:	⌘	If changes are not approved, UE of TDD mode can not be tested.

Clauses affected:	⌘	8.4.1.24								
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘ <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
Other comments:	⌘	Affects Rel-4 and Rel-5 test cases.								

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.

8.4.1.24 Measurement Control and Report: Inter-frequency measurement for event 2A

8.4.1.24.1 Definition

8.4.1.24.2 Conformance requirement

When event 2a is configured in the UE within a measurement, the UE shall:

- 1> when the measurement is initiated or resumed:
 - 2> store the used frequency in the variable BEST_FREQUENCY_2A_EVENT.
- 1> if equation 1 below has been fulfilled for a time period indicated by "Time to trigger" for a frequency included for that event and which is not stored in the variable BEST_FREQUENCY_2A_EVENT:
 - 2> send a measurement report with IEs set as below:
 - 3> set in "inter-frequency measurement event results":
 - 4> "inter-frequency event identity" to "2a"; and
 - 4> "Frequency info" to the frequency that triggered the event; and
 - 4> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cells parameters ID" of the best primary CCPCH for TDD cells on that frequency, not taking into account the cell individual offset;
 - 3> if a non-used frequency triggered the measurement report:
 - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
 - 3> if the used frequency triggered the measurement report:
 - 4> do not include the IE "Inter-frequency measured results list" in the measurement report;
 - 2> update the variable BEST_FREQUENCY_2A_EVENT with that frequency.

Equation 1:

$$Q_{NotBest} \geq Q_{Best} + H_{2a} / 2$$

The variables in the formula are defined as follows:

$Q_{NotBest}$ is the quality estimate of a frequency not stored the "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

Q_{Best} is the quality estimate of the frequency stored in "best frequency" in the variable BEST_FREQUENCY_2A_EVENT.

H_{2a} is the hysteresis parameter for the event 2a in that measurement.

Reference

3GPP TS 25.331 clause 14.2.1.1

8.4.1.24.3 Test Purpose

- 1.A To confirm that the UE sends MEASUREMENT REPORT message if event 2A is configured, and if any of the non- used frequencies quality estimate becomes better than the currently used frequency quality estimate.

1.B To confirm that the UE does not send MEASUREMENT REPORT message indicating event 2A if hysteresis condition is not fulfilled.

1.C To confirm that the UE does not send MEASUREMENT REPORT message indicating event 2A if time to trigger condition is not fulfilled.

8.4.1.24.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.24-1. 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.

Related ICS/IXIT statements

- Compressed mode required yes/no

Test Procedure

Table 8.4.1.24-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "T2", "T3", "T4" and "T5" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.24-1

Parameter	Unit	Cell 1						Cell 4					
		T0	T1	T2	T3	T4	T5	T0	T1	T2	T3	T4	T5
UTRA RF Channel Number		Ch. 1						Ch. 2					
CPICH Ec (FDD)	dBm /3.8 4 Mhz	-65	-65	-65	-70	-65	-70	-75	-60	-75	-55	-75	-55
P-CCPCH RSCP (TDD)	dBm	-65	-65	-65	-70	-65	-70	-75	-60	-75	-55	-75	-55
P-CCPCH TS (3.84Mcps TDD)		TS 0						TS 4					

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform measurements of transmitted power using MEASUREMENT CONTROL message. This measurement is setup to confirm that while sending MEASUREMENT REPORT message, the UE sets IE "Additional measured results" correctly. If UE requires compressed mode ([for FDD only](#)), SS performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode. SS then commands the UE to perform Inter-frequency measurements and report event 2A by sending MEASUREMENT CONTROL message. In MEASUREMENT CONTROL message, IE "Hysteresis" is set to 14.5 dB and IE "Additional measurement list" is set to id of "UE Internal measurements" configured earlier. SS then configures itself according to the values in columns "T1" shown above. Even though quality estimate for Cell 4 has become better than that of Cell 1, event 2A will not be triggered since hysteresis condition is not fulfilled. SS then configures itself according to the values in columns "T2" shown above.

SS sends MEASUREMENT CONTROL message to modify parameter "Hysteresis" of Inter-frequency measurements to 1 dB. SS then configures Cell 1 and Cell 4 according to columns "T3" for short duration (less than 5 seconds), and then configures itself according to columns "T4" shown above. The UE will not send MEASUREMENT REPORT message because time to trigger condition is not fulfilled. SS then configures itself according to the values in columns "T5" shown above. The UE sends MEASUREMENT REPORT message reporting even 2A as well as measurement of transmitted power.

SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Important Note: Duration between time instant "T3" and "T4" (between steps 9 and 10 of expected sequence) must be less than 5 seconds.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	To setup UE Internal measurement. If Compressed Mode not required (refer ICS/IXIT) go to step 4
2		←	PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation. (for FDD only)
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(for FDD only)
4		←	MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2A.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.24-1.
6				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message, as hysteresis condition is not fulfilled.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.24-1.
8		←	MEASUREMENT CONTROL	Modify hysteresis parameter for event 2A.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.24-1.
10				SS re-adjusts the downlink transmission power settings according to columns "T4" in table 8.4.1.24-1. This step should be completed within 5 seconds after completing step 9.
11				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message, as time to trigger condition is not fulfilled.
12				SS re-adjusts the downlink transmission power settings according to columns "T5" in table 8.4.1.24-1.
13		→	MEASUREMENT REPORT	This message should come at least 5 seconds later after changing power setting of Cell 4.
14		←→	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 1) (FDD)

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- Measurement quantity	UE transmitted power
- Filter Coefficient	4
- UE internal reporting quantity	
- UE Transmitted Power	TRUE
- CHOICE mode	FDD
- UE Rx-Tx time difference	FALSE
- CHOICE report criteria	No reporting
Measurement reporting mode	Not present
Additional measurements list	Not present
DPCH compressed mode status	Not present

MEASUREMENT CONTROL (Step 1) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- Measurement quantity	UE transmitted power
- Filter Coefficient	4
- 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	No reporting
Measurement reporting mode	Not present
Additional measurements list	Not present
DPCH compressed mode status	Not present

MEASUREMENT CONTROL (Step 1) (3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	<u>1</u>
<u>Measurement command</u>	<u>Setup</u>
<u>CHOICE measurement type</u>	<u>UE internal measurement</u>
<u>- UE internal measurement quantity</u>	
<u>- Measurement quantity</u>	<u>UE transmitted power</u>
<u>- Filter Coefficient</u>	<u>4</u>
<u>- UE internal reporting quantity</u>	
<u>- UE Transmitted Power</u>	<u>TRUE</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>-CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
<u>- Applied TA</u>	<u>FALSE</u>
<u>- CHOICE report criteria</u>	<u>No reporting</u>
<u>Measurement reporting mode</u>	<u>Not present</u>
<u>Additional measurements list</u>	<u>Not present</u>
<u>DPCH compressed mode status</u>	<u>Not present</u>

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (FDD)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)FDD", 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 Indication	Maintain
- 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	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	TRUE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- 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 or DL only or UL only depending on UE capability
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2 or Not present 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

MEASUREMENT CONTROL (Step 4) (FDD)

Information Element	Value/remark
Measurement identity	2
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	Id of Cell 4
- Frequency Information	Frequency of Cell 4
- 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	Primary scrambling code of Cell 4
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	0
- 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
- Inter-frequency SET UPDATE	
- UE autonomous update mode	On with no reporting
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2A
- Used frequency threshold	Not present
- Used frequency W	0
- Hysteresis	14.5 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non-used frequency parameter list	
- Non-used frequency threshold	-72 dBm
- Non-used frequency W	0
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	
- Measurement identity	1
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 4) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	2
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not present
- New inter-frequency cells	
- Inter-frequency cell id	Id of Cell 4
- Frequency Info	Frequency 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	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Cell parameters ID	Cell parameters ID of Cell 4
- 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	0
- 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	
- SFN-SFN observed time difference reporting indicator	No report
- 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	2A
- Threshold used frequency	Not present
- W used frequency	0
- Hysteresis	14.5 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Parameters required for each non-used frequency	
- Threshold non-used frequency	-72 dBm
- W non-used frequency	0
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	
- Measurement identity	1
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 4) (3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	<u>2</u>
<u>Measurement command</u>	<u>Setup</u>
- <u>CHOICE measurement type</u>	<u>Inter-frequency measurement</u>
- <u>Inter-frequency measurement objects list</u>	
- <u>Inter-frequency cell removal</u>	<u>Not present</u>
- <u>New inter-frequency cells</u>	
- <u>Inter-frequency cell id</u>	<u>Id of Cell 4</u>
- <u>Frequency Info</u>	<u>Frequency of Cell 4</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>Not present</u>
- <u>Reference time difference to cell</u>	<u>Not present</u>
- <u>Read SFN Indicator</u>	<u>FALSE</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Primary CCPCH Info</u>	
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
- <u>CHOICE SyncCase</u>	<u>SyncCase 1</u>
- <u>Timeslot</u>	<u>4</u>
- <u>Cell parameters ID</u>	<u>Cell parameters ID of Cell 4</u>
- <u>SCTD indicator</u>	<u>FALSE</u>
- <u>Primary CCPCH TX power</u>	<u>Not present</u>
- <u>Timeslot list</u>	<u>Not present</u>
- <u>Cell for measurement</u>	<u>Not present</u>
- <u>Inter-frequency measurement quantity</u>	
- <u>CHOICE reporting criteria</u>	<u>Inter-frequency reporting criteria</u>
- <u>Filter Coefficient</u>	<u>0</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Measurement quantity for frequency quality estimate</u>	<u>P-CCPCH RSCP</u>
- <u>Inter-frequency reporting quantity</u>	
- <u>UTRAN carrier RSSI</u>	<u>FALSE</u>
- <u>Frequency quality estimate</u>	<u>FALSE</u>
- <u>Non frequency related quantities</u>	
- <u>SFN-SFN observed time difference reporting indicator</u>	<u>No report</u>
- <u>Cell synchronisation information reporting indicator</u>	<u>FALSE</u>
- <u>Cell identity reporting indicator</u>	<u>FALSE</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Timeslot ISCP reporting indicator</u>	<u>FALSE</u>
- <u>Proposed TGSN reporting indicator</u>	<u>FALSE</u>
- <u>Primary CCPCH RSCP reporting indicator</u>	<u>FALSE</u>
- <u>Pathloss reporting indicator</u>	<u>FALSE</u>
- <u>Measurement validity</u>	<u>CELL_DCH state</u>
- <u>CHOICE report criteria</u>	<u>Inter-frequency measurement reporting criteria</u>
- <u>Parameters required for each events</u>	
- <u>Inter-frequency event identity</u>	<u>2A</u>
- <u>Threshold used frequency</u>	<u>Not present</u>
- <u>W used frequency</u>	<u>0</u>
- <u>Hysteresis</u>	<u>14.5 dB</u>
- <u>Time to trigger</u>	<u>5000 mSec</u>
- <u>Reporting cell status</u>	<u>Not present</u>
- <u>Parameters required for each non-used frequency</u>	
- <u>Threshold non-used frequency</u>	<u>-72 dBm</u>
- <u>W non-used frequency</u>	<u>0</u>
<u>Measurement reporting mode</u>	
- <u>Measurement reporting transfer mode</u>	<u>Acknowledged mode RLC</u>
- <u>Periodic reporting / Event trigger reporting mode</u>	<u>Event trigger</u>
<u>Additional measurement list</u>	
- <u>Measurement identity</u>	<u>1</u>
<u>DPCH compressed mode status info</u>	<u>Not present</u>

MEASUREMENT CONTROL (Step 8)

Information Element	Value/remark
Measurement identity	2
Measurement command	Modify
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	Not present
- Cell for measurement	Not present
- Inter-frequency measurement quantity	Not present
- Inter-frequency reporting quantity	Not present
- Measurement validity	Not present
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2A
- Threshold used frequency	Not present
- W used frequency	0
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Parameters required for each non-used frequency	
- Threshold non-used frequency	-72 dBm
- W non-used frequency	0
Measurement reporting mode	Not present
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 13) (FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	
- Measured results	UE internal measured results
- UE transmitted power	Check to see if it is present
- UE RX TX report entry list	Check to see if it is absent
Event results	Inter-frequency measurement event results, 2A
- Inter-frequency event identity	
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

MEASUREMENT REPORT (Step 13) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	
- Measured results	UE internal measured results
CHOICE mode	Check to see if set to "TDD"
- UE transmitted power	Check to see if it is present
CHOICE TDD option	Check to see if set to "1.28 Mcps TDD"
- T _{ADV}	Check to see if it is absent
Event results	Check to see if set to "Inter-frequency measurement event results"
- Inter-frequency event identity	Check to see if set to "2A"
- Inter-frequency Cells	
- Frequency info	Check to see if set to Frequency of 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 "DEFAULT"
- Cell parameters ID	Check to see if set to Cell parameter ID of Cell 4
- SCTD indicator	Check to see if set to "FALSE"

MEASUREMENT REPORT (Step 13) (3.84 Mcps TDD)

Information Element	Value/remark
<u>Measurement identity</u>	<u>Check to see if set to 2</u>
<u>Measured results</u>	<u>Check to see if it is absent</u>
<u>Measured results on RACH</u>	<u>Check to see if it is absent</u>
<u>Additional measured results</u>	
<u>- Measured results</u>	<u>UE internal measured results</u>
<u>CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>- UE transmitted power</u>	<u>Check to see if it is present</u>
<u>CHOICE TDD option</u>	<u>Check to see if set to "3.84 Mcps TDD"</u>
<u>- Applied TA</u>	<u>Check to see if it is absent</u>
<u>Event results</u>	<u>Check to see if set to "Inter-frequency measurement event results"</u>
<u>- Inter-frequency event identity</u>	<u>Check to see if set to "2A"</u>
<u>- Inter-frequency Cells</u>	
<u>- Frequency info</u>	<u>Check to see if set to Frequency of Cell 4</u>
<u>- Non frequency related measurement event results</u>	
<u>CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>- Primary CCPCH info</u>	
<u>CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>CHOICE TDD option</u>	<u>Check to see if set to "3.84 Mcps TDD"</u>
<u>CHOISE SyncCase</u>	<u>Check to see if set to "Sync Case 1"</u>
<u>- Timeslot</u>	<u>Check to see if set to "4"</u>
<u>- Cell parameters ID</u>	<u>Check to see if set to Cell parameter ID of Cell 4</u>
<u>- SCTD indicator</u>	<u>Check to see if set to "FALSE"</u>

8.4.1.24.5 Test Requirement

- 1.A In step 13 the UE shall send MEASUREMENT REPORT message indicating event 2A. IE ' Inter-frequency Cells ' in MEASUREMENT REPORT message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for ~~1.28 Mcps~~ TDD) of Cell 4.
- 1.B In step 6, the UE shall not send MEASUREMENT REPORT message.

1.C In step 11, the UE shall not send MEASUREMENT REPORT message.

CHANGE REQUEST

⌘ **TS34.123-1 CR 804** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ Add HCR TDD content of Inter-frequency measurement for event 2B and 2E		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘	1. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘	In Clause 8.4.1.25: 1) Test Purpose is updated; 2) In "Test Procedure", Table 8.4.1.25-1 is updated; 3) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 4) Test Requirement is updated; 5) Editorial changes
Consequences if not approved:	⌘	If changes are not approved, UE of TDD mode not be tested.

Clauses affected:	⌘	8.4.1.25										
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘ <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
<input type="checkbox"/>	<input checked="" type="checkbox"/>											
Other comments:	⌘	Affects Rel-4 and Rel-5 test cases.										

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.

8.4.1.25 Measurement Control and Report: Inter-frequency measurement for events 2B and 2E

8.4.1.25.1 Definition

8.4.1.25.2 Conformance requirement

When event 2b is configured in the UE within a measurement, the UE shall:

- 1> if equations 1 and 2 below have been fulfilled for a time period indicated by "Time to Trigger" from the same instant, respectively for one or several non-used frequencies included for that event and for the used frequency:
- 2> if any of those non-used frequency is not stored in the variable TRIGGERED_2B_EVENT:
 - 3> store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED_2B_EVENT into that variable;
 - 3> send a measurement report with IEs set as below:
 - 4> set in "inter-frequency measurement event results":
 - 5> "inter-frequency event identity" to "2b"; and
 - 5> for each non-used frequency that triggered the event, beginning with the best frequency:
 - 6> "Frequency info" to that non-used frequency; and
 - 6> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency, not taking into account the cell individual offset;
 - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
 - 1> if equation 3 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2B_EVENT:
 - 2> remove that non-used frequency from the variable TRIGGERED_2B_EVENT.
 - 1> if equation 4 below is fulfilled for the used frequency:
 - 2> clear the variable TRIGGERED_2B_EVENT.

Triggering conditions:

Equation 1:

$$Q_{Non\ used} \geq T_{Non\ used\ 2b} + H_{2b} / 2$$

The variables in the formula are defined as follows:

$Q_{Non\ used}$ is the quality estimate of a non-used frequency that becomes better than an absolute threshold.

$T_{Non\ used\ 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

H_{2b} is the hysteresis parameter for the event 2b.

Equation 2:

$$Q_{Used} \leq T_{Used\ 2b} - H_{2b} / 2$$

The variables in the formula are defined as follows:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

H_{2b} is the hysteresis parameter for the event 2b.

Leaving triggered state condition:

Equation 3:

$$Q_{Non\ used} < T_{Non\ used\ 2b} - H_{2b} / 2$$

The variables in the formula are defined as follows:

$Q_{Non\ used}$ is the quality estimate of a non-used frequency that is stored in the variable TRIGGERED_2B_EVENT.

$T_{Non\ used\ 2b}$ is the absolute threshold that applies for this non-used frequency in that measurement.

H_{2b} is the hysteresis parameter for the event 2b.

Equation 4:

$$Q_{Used} > T_{Used\ 2b} + H_{2b} / 2$$

The variables in the formula are defined as follows:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2b}$ is the absolute threshold that applies for the used frequency in that measurement.

H_{2b} is the hysteresis parameter for the event 2b.

...

When event 2e is configured in the UE within a measurement, the UE shall:

- 1> if equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger":
 - 2> if any of those non-used frequencies is not stored in the variable TRIGGERED_2E_EVENT:
 - 3> store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED_2E_EVENT into that variable;
 - 3> send a measurement report with IEs set as below:
 - 4> set in "inter-frequency measurement event results":
 - 5> "inter-frequency event identity" to "2e"; and
 - 5> for each non-used frequency that triggered the event, beginning with the best frequency:
 - 6> "Frequency info" to that non-used frequency; and
 - 6> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency, not taking into account the cell individual offset;
 - 4> set the IE "measured results" and the IE "additional measured results" according to TS 25.331 subclause 8.4.2, not taking into account the cell individual offset;
 - 1> if equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED_2E_EVENT:
 - 2> remove that non-used frequency from the variable TRIGGERED_2E_EVENT.

Triggering condition:

Equation 1:

$$Q_{Non\ used} \leq T_{Non\ used\ 2e} - H_{2e} / 2$$

The variables in the formula are defined as follows:

$Q_{Non\ used}$ is the quality estimate of a non-used frequency that becomes worse than an absolute threshold.

$T_{Non\ used\ 2e}$ is the absolute threshold that applies for that non-used frequency for that event.

H_{2e} is the hysteresis parameter for the event 2e.

Leaving triggered state condition:

Equation 2:

$$Q_{Non\ used} > T_{Non\ used\ 2e} + H_{2e} / 2$$

The variables in the formula are defined as follows:

$Q_{Non\ used}$ is the quality estimate of a non-used frequency stored in the variable TRIGGERED_2E_EVENT.

$T_{Non\ used\ 2e}$ is the absolute threshold that applies for that non-used frequency for that event.

H_{2e} is the hysteresis parameter for the event 2e.

Reference

3GPP TS 25.331 clause 14.2.1.2, 14.2.1.5.

8.4.1.25.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message when event 2E is configured and the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH info_(for FDD) or primary CCPCH info_(for TDD) on the non-used frequency that triggered the event.
2. To confirm that the UE sends MEASUREMENT REPORT message when event 2B is configured and estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH info_(for FDD) or primary CCPCH info_(for TDD) on the non-used frequency that triggered the event.

8.4.1.25.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.24-1. 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.

Related ICS/IXIT statements

- Compressed mode required yes/no

Test Procedure

Table 8.4.1.25-1 illustrates the downlink power to be applied for the 2 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 text in this clause.

Table 8.4.1.25-1

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 2		
CPICH Ec (FDD)	dBm /3.8 4 MHz	-55	-55	-85	-85	-55	-55
P-CCPCH RSCP(TDD)	dBm	-60	-60	-80	-80	-60	-60
P-CCPCH TS (3.84 Mcps TDD)		TS 0			TS 4		

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform Inter-frequency measurements and report event 2B and event 2E by sending MEASUREMENT CONTROL message. Note that the Filter Coefficient IE has a value of 4 so Layer 3 Filtering applies in this case.

If UE requires compressed mode, SS performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode [\(for FDD only\)](#).

Since quality estimate of non-used frequency is below threshold, the UE sends MEASUREMENT REPORT message indicating event 2E.

SS then configures itself according to the values in columns "T1" shown above. Now quality estimate of used and non-used frequency is above threshold and hence neither event 2B nor event 2E will be triggered. SS then configures itself according to the values in columns "T2" shown above. Quality estimate for used frequency is now below threshold, while that of non-used frequency is above threshold, the UE sends MEASUREMENT REPORT message to report event 2B.

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		←	MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2B and 2E. If Compressed Mode not required (refer ICS/IXIT) go to step 4
2		←	PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation. (for FDD only)
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	(for FDD only)
4		→	MEASUREMENT REPORT	The UE shall report event 2E. Time duration between activation of compressed mode and reception of this message should be at least 5 seconds. Layer 3 Filtering causes an additional delay.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.25-1.
6				Check for 10 seconds the UE shall not send measurement report message.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.25-1.
8		→	MEASUREMENT REPORT	The UE shall report event 2B. Time duration between changing power levels according to columns "T2" and reception of this message should be at least 5 seconds. Layer 3 Filtering causes an additional delay. For Cell 1 the CPICH Ec value of -80 dBm(for FDD)or the P-CCPCH RSCP value of -75 dBm (for TDD)would have to be reported at least three times from the Physical Layer to cause the Cell 1 frequency threshold to be reached. Depending on tolerance values this number will be greater (CPICH Ec (for FDD) or P-CCPCH RSCP(for TDD) is +/- 3 dBm, SS set Hysteresis value is +/- 2dB)
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

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 1)(FDD)

Information Element	Value/remark
Measurement identity	4
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	Id of Cell 4
- Frequency Information	Frequency of Cell 4
- 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	Primary scrambling code of Cell 4
- 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 Ec/No
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	Not present
- Inter-frequency SET UPDATE	
- UE autonomous update mode	On with no reporting
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2E
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non used frequency parameter list	
- Non used frequency threshold	-70 dBm
- Non used frequency W	0
- Inter-frequency event identity	2B
- Used frequency threshold	-70 dBm
- Used frequency W	0.4
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Within active set or within virtual active set or of the other RAT
- Maximum number of reporting cells	1
- Non used frequency parameter list	
- Non used frequency threshold	-70 dBm
- Non used frequency W	0
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 1)(1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	4
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement objects list	
- Inter-frequency cell removal	Not present
- New inter-frequency cells	
- Inter-frequency cell id	Id of Cell 4
- Frequency Information	Frequency 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	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Cell parameters ID	Cell parameters ID of Cell 4
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2E
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Within active set or within virtual active set or of the other RAT
- Parameters required for each non-used frequency	
- Threshold non used frequency	-70dBm
- W non-used frequency	0
- Inter-frequency event identity	2B
- Threshold used frequency	-70 dBm
- W used frequency	0.4
- Hysteresis	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Within active set or within virtual active set or of the other RAT
- Maximum number of reporting cells	1
- Parameters required for each non-used frequency	
- Threshold non used frequency	-70 dBm
- W non-used frequency	0
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC

- Periodic reporting / Event trigger reporting mode Additional measurement list DPCH compressed mode status info	Event trigger Not present Not present
--	---

MEASUREMENT CONTROL (Step 1)(3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	<u>4</u>
<u>Measurement command</u>	<u>Setup</u>
- <u>CHOICE measurement type</u>	<u>Inter-frequency measurement</u>
- <u>Inter-frequency measurement objects list</u>	
- <u>Inter-frequency cell removal</u>	<u>Not present</u>
- <u>New inter-frequency cells</u>	
- <u>Inter-frequency cell id</u>	<u>Id of Cell 4</u>
- <u>Frequency Information</u>	<u>Frequency of Cell 4</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>Not present</u>
- <u>Reference time difference to cell</u>	<u>Not present</u>
- <u>Read SFN Indicator</u>	<u>FALSE</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Primary CCPCH Info</u>	
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
- <u>CHOICE SyncCase</u>	<u>SyncCase 1</u>
- <u>Timeslot</u>	<u>4</u>
- <u>Cell parameters ID</u>	<u>Cell parameters ID of Cell 4</u>
- <u>SCTD indicator</u>	<u>FALSE</u>
- <u>Primary CCPCH TX power</u>	<u>Not present</u>
- <u>Timeslot list</u>	<u>Not present</u>
- <u>Cell for measurement</u>	<u>Not present</u>
- <u>Inter-frequency measurement quantity</u>	
- <u>CHOICE reporting criteria</u>	<u>Inter-frequency reporting criteria</u>
- <u>Filter Coefficient</u>	<u>4</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Measurement quantity for frequency quality estimate</u>	<u>P-CCPCH RSCP</u>
- <u>Inter-frequency reporting quantity</u>	
- <u>UTRAN Carrier RSSI</u>	<u>FALSE</u>
- <u>Frequency quality estimate</u>	<u>FALSE</u>
- <u>Non frequency related quantities</u>	
- <u>Cell synchronisation information reporting indicator</u>	<u>FALSE</u>
- <u>Cell identity reporting indicator</u>	<u>FALSE</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Timeslot ISCP reporting indicator</u>	<u>FALSE</u>
- <u>Proposed TGSN reporting indicator</u>	<u>FALSE</u>
- <u>Primary CCPCH RSCP reporting indicator</u>	<u>TRUE</u>
- <u>Pathloss reporting indicator</u>	<u>FALSE</u>
- <u>Measurement validity</u>	<u>Not present</u>
- <u>CHOICE report criteria</u>	<u>Inter-frequency measurement reporting criteria</u>
- <u>Parameters required for each events</u>	
- <u>Inter-frequency event identity</u>	<u>2E</u>
- <u>Hysteresis</u>	<u>1 dB</u>
- <u>Time to trigger</u>	<u>5000 mSec</u>
- <u>Reporting cell status</u>	<u>Within active set or within virtual active set or of the other RAT</u>
- <u>Parameters required for each non-used frequency</u>	
- <u>Threshold non used frequency</u>	<u>-70dBm</u>
- <u>W non-used frequency</u>	<u>0</u>
- <u>Inter-frequency event identity</u>	<u>2B</u>
- <u>Threshold used frequency</u>	<u>-70 dBm</u>
- <u>W used frequency</u>	<u>0.4</u>
- <u>Hysteresis</u>	<u>1 dB</u>
- <u>Time to trigger</u>	<u>5000 mSec</u>

- Reporting cell status	Within active set or within virtual active set or of the other RAT
- Maximum number of reporting cells	1
- Parameters required for each non-used frequency	
- Threshold non used frequency	-70 dBm
- W non-used frequency	0
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

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH 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	Maintain
- Timing Indication	
- 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	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	TRUE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- 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 or DL only or UL only depending on UE capability
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2 or Not present depending on UE capability
- Downlink frame type	A
- 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

MEASUREMENT REPORT (Step 4) (FDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
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, 2E
- Inter-frequency event identity	
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

MEASUREMENT REPORT (Step 4) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured results	Check to see if it set to "Inter-frequency measured results list"
- Frequency information	Check to see if set to Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell measurement results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE mode	Check to see if set to "TDD"
- Cell parameters ID	Check to see if set to Cell parameters ID for cell 4
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- Timeslot list/ISCP	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 "2E"
- Inter-frequency cells	
- Frequency info	Check to see if set to Frequency of 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 mode option	Check to see if set to "1.28 Mcps TDD"
- TSTD Indicator	Check to see if set to "DEFAULT"
- Cell parameters ID	Check to see if set to Cell parameters ID of Cell 4
- SCTD indicator	Check to see if set to "FALSE"

MEASUREMENT REPORT (Step 4) (3.48 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	<u>Check to see if set to 4</u>
<u>Measured results</u>	<u>Check to see if it set to "Inter-frequency measured results list"</u>
<u>- Frequency information</u>	<u>Check to see if set to Frequency of Cell 4</u>
<u>- UTRA carrier RSSI</u>	<u>Check to see if it is absent</u>
<u>- Inter-frequency cell measured results</u>	
<u>- Cell measurement results</u>	
<u>- Cell Identity</u>	<u>Check to see if it is absent</u>
<u>- Cell synchronisation information</u>	<u>Check to see if this IE is absent</u>
<u>- CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>- Cell parameters ID</u>	<u>Check to see if set to Cell parameters ID for cell 4</u>
<u>- Proposed TGSN</u>	<u>Check to see if it is absent</u>
<u>- Primary CCPCH RSCP</u>	<u>Check to see if it is present</u>
<u>- Pathloss</u>	<u>Check to see if it is absent</u>
<u>- Timeslot list/ISCP</u>	<u>Check to see if it is absent</u>
<u>Measured results on RACH</u>	<u>Check to see if it is absent</u>
<u>Additional measured results</u>	<u>Check to see if it is absent</u>
<u>Event results</u>	
<u>- CHOICE event results</u>	<u>Check to see if set to "Inter-frequency measurement event results"</u>
<u>- Inter-frequency event identity</u>	<u>Check to see if set to "2E"</u>
<u>- Inter-frequency cells</u>	
<u>- Frequency info</u>	<u>Check to see if set to Frequency of Cell 4</u>
<u>- Non-frequency related measurement event results</u>	
<u>- CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>- Primary CCPCH info</u>	
<u>CHOICE mode</u>	<u>Check to see if set to "TDD"</u>
<u>- CHOICE mode option</u>	<u>Check to see if set to "3.48 Mcps TDD"</u>
<u>CHOISE SyncCase</u>	<u>Check to see if set to "Sync Case 1"</u>
<u>- Timeslot</u>	<u>Check to see if set to "4"</u>
<u>- Cell parameters ID</u>	<u>Check to see if set to Cell parameters ID of Cell 4</u>
<u>- SCTD indicator</u>	<u>Check to see if set to "FALSE"</u>

MEASUREMENT REPORT (Step 8) (FDD)

Information Element	Value/remark
Measurement identity	4
Measured results	Inter-frequency measured results
- Frequency information	Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- Mode Specific Info	FDD
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling 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
Additional measured results	Check to see if it is absent
Event results	Inter-frequency measurement event results, 2B
- Inter-frequency event identity	
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

MEASUREMENT REPORT (Step 8) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 4
Measured results	Check to see if it set to "Inter-frequency measured results list"
- Frequency information	Check to see if set to Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell measurement results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE mode	Check to see if set to "TDD"
- Cell parameters ID	Check to see if set to Cell parameters ID for cell 4
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- Timeslot list/ISCP	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 "2B"
- Inter-frequency cells	
- Frequency info	Check to see if set to Frequency of 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 mode option	Check to see if set to "1.28 Mcps TDD"
- TSTD Indicator	Check to see if set to "DEFAULT"
- Cell parameters ID	Check to see if set to Cell parameters ID of Cell 4
- SCTD indicator	Check to see if set to "FALSE"

[MEASUREMENT REPORT \(Step 8\) \(3.84Mcps TDD\)](#)

Information Element	Value/remark
Measurement identity	Check to see if set to 4

Measured results	Check to see if it set to "Inter-frequency measured results list"
- Frequency information	Check to see if set to Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell measurement results	
- Cell Identity	Check to see if it is absent
- Cell synchronisation information	Check to see if this IE is absent
- CHOICE mode	Check to see if set to "TDD"
- Cell parameters ID	Check to see if set to Cell parameters ID for cell 4
- Proposed TGSN	Check to see if it is absent
- Primary CCPCH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- Timeslot list/ISCP	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 "2B"
- Inter-frequency cells	
- Frequency info	Check to see if set to Frequency of 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 mode option	Check to see if set to "3.84 Mcps TDD"
CHOISE SyncCase	Check to see if set to "Sync Case 1"
- Timeslot	Check to see if set to "4"
- Cell parameters ID	Check to see if set to Cell parameters ID of Cell 4
- SCTD indicator	Check to see if set to "FALSE"

8.4.1.25.5 Test Requirement

1. In step 4 the UE shall send MEASUREMENT REPORT message indicating event 2E. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (~~for 1.28 Mcps~~ for TDD) of Cell 4.
2. In step 8 the UE shall send MEASUREMENT REPORT message indicating event 2B. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (~~for 1.28 Mcps~~ for TDD) of Cell 4.

CR-Form-v7

CHANGE REQUEST

⌘ **TS34.123-1 CR 805** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ Add HCR TDD content for UE internal measurement, event 6c		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘	1. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘	In Clause 8.4.1.37: 1) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 2) Editorial changes
Consequences if not approved:	⌘	If changes are not approved, UE of TDD mode cannot be tested properly.

Clauses affected:	⌘	8.4.1.37						
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘ <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N							
<input type="checkbox"/>	<input checked="" type="checkbox"/>							
<input checked="" type="checkbox"/>								
<input checked="" type="checkbox"/>								
Other comments:	⌘	Affects Rel-4 and Rel-5 test cases.						

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.

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)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement Identity</u>	<u>6</u>
<u>Measurement Command</u>	<u>Setup</u>
<u>Measurement Reporting Mode</u>	
<u>- Measurement Reporting Transfer Mode</u>	<u>Acknowledged Mode RLC</u>
<u>- Periodic Reporting / Event Trigger Reporting Mode</u>	<u>Event trigger</u>
<u>Additional measurements list</u>	<u>Not Present</u>
<u>CHOICE measurement type</u>	<u>UE internal measurement</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>- measurement quantity</u>	<u>UE Transmitter Power</u>
<u>- Filter coefficient</u>	<u>0</u>
<u>- UE internal reporting quantity</u>	
<u>- UE Transmitted power</u>	<u>TRUE</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>- CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
<u>- Applied TA</u>	<u>FALSE</u>

- 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 -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 <i>event result</i>	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 <i>mode</i>	
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 <i>mode</i>	Check to see if set to TDD
- UE Transmitted Power	Check that this IE is set a value that is below -50 -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 <i>event result</i>	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 <i>mode</i>	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 "3.84 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 <i>event result</i>	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 \(for 3.84 Mcps TDD\)](#).

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 806 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Add HCR TDD content for UE internal measurement, event 6d		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘ In Clause 8.4.1.38: 1) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 2) Editorial changes
Consequences if not approved:	⌘ If changes are not approved, UE of TDD mode can not be tested properly.

Clauses affected:	⌘ 8.4.1.38										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X		
Y	N										
	X										
	X										
	X										
Other comments:	⌘ Affects Rel-4 and Rel-5 test cases.										

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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.

8.4.1.38 Measurement Control and Report: UE internal measurement, event 6d

8.4.1.38.1 Definition

8.4.1.38.2 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 maximum value.

Reference

3GPP TS 25.331 clause 14.6.2.4

8.4.1.38.3 Test Purpose

1. To confirm that the UE sends a measurement report for event 6d when the UE Tx power reaches its maximum value when event 6d has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.38.4 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.

For FDD and 1.28 Mcps TDD: The SS sends TPC_cmd equal to +1 until the transmitter power of the UE reaches its maximum value.

For 3.84 Mcps TDD: The SS sets the ISCP reported for the timeslot containing the uplink DPCH to the maximum reportable.

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 6d 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 maximum value.
3a		←		For 3.84 Mcps TDD: The SS sets the ISCP reported for the timeslot containing the uplink DPCH to the maximum reportable.
4		→	MEASUREMENT REPORT	After about 200 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 6d.
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.

MEASUREMENT CONTROL (Step 2) (FDD)

Information Element	Value/remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event triggered
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
CHOICE measurement type	
- UE internal measurement	UE Transmitter Power
- UE internal measurement quantity	0
- Filter coefficient	
- UE internal reporting quantity	TRUE
- UE Transmitted power	
- CHOICE mode	FALSE
- UE Rx-Tx time difference	
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	event 6d
- Time to trigger	200

MEASUREMENT CONTROL (Step 2) (1.28 Mcps TDD)

Information Element	Value/remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event triggered
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
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	6d
- Time to trigger	200

MEASUREMENT CONTROL (Step 2) (3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement Identity</u>	<u>6</u>
<u>Measurement Command</u>	<u>Setup</u>
<u>Measurement Reporting Mode</u>	<u>Acknowledged Mode RLC</u>
<u>- Measurement Reporting Transfer Mode</u>	<u>Event triggered</u>
<u>- Periodic Reporting / Event Trigger Reporting Mode</u>	<u>Not Present</u>
<u>Additional measurements list</u>	
<u>CHOICE measurement type</u>	<u>UE internal measurement</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>- measurement quantity</u>	<u>UE Transmitter Power</u>
<u>- Filter coefficient</u>	<u>0</u>
<u>- UE internal reporting quantity</u>	
<u>- UE Transmitted power</u>	<u>TRUE</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>- CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
<u>- Applied TA</u>	<u>FALSE</u>
<u>- CHOICE report criteria</u>	<u>UE internal measurement reporting criteria</u>
<u>- Parameters sent for each UE internal measurement event</u>	

- UE internal event identity	6d
- Time to trigger	200

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 to the maximum outpower of the UE.
- 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 <i>event result</i>	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 6d
CHOICE <i>mode</i>	
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 to the maximum outpower of the UE.
- 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 <i>event result</i>	Check that this IE is set to UE internal measurement event results
UE internal event identity	Check that this IE is set to 6d

[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 to the maximum outpower of the UE.
- CHOICE TDD option	Check to see if set to "3.84 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 <i>event result</i>	Check that this IE is set to UE internal measurement event results
UE internal event identity	Check that this IE is set to 6d

8.4.1.38.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6d when its transmit power has reached its maximum. The maximum transmitted power of the UE shall be according to the class of the UE.

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 807 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Add HCR TDD content for UE internal measurement, event 6e		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ 1. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘ In Clause 8.4.1.39: 1) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 2) Editorial changes
Consequences if not approved:	⌘ If changes are not approved, UE of TDD mode cannot be tested properly.

Clauses affected:	⌘ 8.4.1.39						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	<input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/>							
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	<input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/>							
Other comments:	⌘ Affects Rel-4 and Rel-5 test cases.						

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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.

8.4.1.39 Measurement Control and Report: UE internal measurement, event 6e

8.4.1.39.1 Definition

8.4.1.39.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the UE RSSI reaches the UE's dynamic receiver range.

Reference

3GPP TS 25.331 clause 14.6.2.5

8.4.1.39.3 Test Purpose

1. To confirm that the UE sends a measurement report for event 6e when the UE RSSI reaches the UE's dynamic receiver range when event 6e has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.39.4 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 increases its output power by 0.5 dB step until the UE RSSI reaches the UE's receiver dynamic range. 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 6e in the UE.
3		←		The SS increases its output power by 0.5 dB steps until the UE RSSI reaches the UE's receiver dynamic range.
4		→	MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to SS triggered by event 6e.
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.

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 trigger
Additional measurements list	Not Present
CHOICE measurement type	
- UE internal measurement	
- UE internal measurement quantity	UTRA Carrier RSSI
- Filter coefficient	0
- UE internal reporting quantity	Not included
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	6e
- 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
- UE internal measurement quantity	
- CHOICE mode	TDD
- measurement quantity	UTRA Carrier RSSI
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted Power	False
- 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	6e
- Time to trigger	0

MEASUREMENT CONTROL (Step 2) (3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement Identity</u>	<u>6</u>
<u>Measurement Command</u>	<u>Setup</u>
<u>Measurement Reporting Mode</u>	<u>Acknowledged Mode RLC</u>
- <u>Measurement Reporting Transfer Mode</u>	<u>Event triggered</u>
- <u>Periodic Reporting / Event Trigger Reporting Mode</u>	<u>Not Present</u>
<u>Additional measurements list</u>	<u>UE internal measurement</u>
<u>CHOICE measurement type</u>	<u>TDD</u>
- <u>UE internal measurement quantity</u>	<u>UTRA Carrier RSSI</u>
- <u>CHOICE mode</u>	<u>0</u>
- <u>measurement quantity</u>	
- <u>Filter coefficient</u>	
- <u>UE internal reporting quantity</u>	
- <u>UE Transmitted Power</u>	<u>False</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>CHOICE TDD option</u>	<u>3.84 Mcps TDD</u>
- <u>Tadvance</u>	<u>False</u>
<u>CHOICE report criteria</u>	<u>UE internal measurement reporting criteria</u>
- <u>Parameters sent for each UE internal measurement event</u>	
- <u>UE internal event identity</u>	<u>6e</u>
- <u>Time to trigger</u>	<u>0</u>

MEASUREMENT REPORT (Step 4)_(FDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	Check to see if set to 6
<u>Measured Results</u>	Check that this IE is not included
<u>Measured results on RACH</u>	Check that this IE is not included
<u>Additional measured results</u>	Check that this IE is not included
<u>Event Results</u>	
<u>CHOICE event result</u>	Check that this IE is set to UE internal measurement event results
<u>UE internal measurement results</u>	
<u>UE internal event identity</u>	Check that this IE is set to 6e
<u>CHOICE mode</u>	
<u>Primary CPICH info</u>	This IE should not be included

MEASUREMENT REPORT (Step 4)_(TDD)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u>	Check to see if set to 6
<u>Measured Results</u>	Check that this IE is not included
<u>Measured results on RACH</u>	Check that this IE is not included
<u>Additional measured results</u>	Check that this IE is not included
<u>Event Results</u>	
<u>CHOICE event result</u>	Check that this IE is set to UE internal measurement event results
<u>UE internal event identity</u>	Check that this IE is set to 6e

8.4.1.39.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6e when the UE RSSI reaches the UE's receiver dynamic range.

CR-Form-v7
CHANGE REQUEST
⌘ TS34.123-1 CR 808 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ Adding of new test cases for events 1G for HCR TDD		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ B	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Events 1G for TDD should be tested		
Summary of change:	⌘ Inclusion of the new test cases: 8.4.1. 45 Measurement Control and Report: Intra-frequency measurement for event 1G (TDD)		
Consequences if not approved:	⌘ Measurement control and report for events 1G for TDD cannot be tested.		

Clauses affected:	⌘ 8.4.1.45										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘ Other core specifications ⌘ ⌘ Test specifications ⌘ ⌘ O&M Specifications ⌘	
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘ Affects Rel-4 and Rel-5 test cases.										

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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.

8.4.1.45 Measurement Control and Report: Intra-frequency measurement for event 1G (~~1.28 Mcps~~-TDD)

8.4.1.45.1 Definition

8.4.1.45.2 Conformance requirement

When event 1G is configured in the UE, the UE shall:

- 1> if the equation 1 is fulfilled for a P-CCPCHs during the time "Time to trigger" and if that P-CCPCH is not included in the "primary CCPCH info" in the variable TRIGGERED_1G_EVENT:
- 2> include that P-CCPCH in "cells triggered" in the variable TRIGGERED_1G_EVENT;
- 2> send a measurement report with IEs set as below:
 - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1g";
 - 3> set the first entry in "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH which was stored in the variable TRIGGERED_1G_EVENT;
 - 3> include all entries in "cells triggered" in variable TRIGGERED_1G_EVENT in "cell measurement event results" in the measurement report in descending order according to:

$$10 \cdot \text{Log}M + O$$

where M is the P-CCPCH RSCP and O the individual offset of a cell;

- 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 1> if Equation 2 below is fulfilled for a primary CCPCH:
 - 2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED_1G_EVENT:
 - 3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED_1G_EVENT;

The UE shall use the equations below for evaluation of reporting event 1g:

Equation 1

$$10 \cdot \text{Log}M_i + O_i - H_{1g} > 10 \cdot \text{Log}M_{previous_best} + O_{previous_best}$$

The variables in the formula are defined as follows:

$M_{previous_best}$ is the current P-CCPCH RSCP of the previous best cell expressed in mW

$O_{previous_best}$ is the cell individual offset of the previous best cell

M_i is the current P-CCPCH RSCP of the currently evaluated cell i expressed in mW

O_i is the cell individual offset of the currently evaluated cell i

H_{1g} is the hysteresis parameter for the event 1g.

Equation 2

$$10 \cdot \text{Log}M_i + O_i + H_{1g} < 10 \cdot \text{Log}M_{previous_best} + O_{previous_best}$$

The variables in the formula are defined as follows:

$M_{previous_best}$ is the current P-CCPCH RSCP of the previous best cell expressed in mW

$O_{previous_best}$ is the cell individual offset of the previous best cell

M_i is the current P-CCPCH RSCP of the currently evaluated cell i expressed in mW

O_i is the cell individual offset of the currently evaluated cell i

H_{1g} is the hysteresis parameter for the event 1g.

Reference

3GPP TS 25.331, clauses 14.1.3.1

8.4.1.45.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message if event 1G is configured and intra-frequency measurement indicates change of best cell.

8.4.1.45.4 Method of test

Initial Condition

System Simulator: 2 cell(cell 1 and cell 2 are active).The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.45-1. 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 8.4.1.45-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1" is to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.45-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RFChannel Number		Ch. 1		Ch. 1	
P-CCPCH RSCP	dBm	-65	-65	-70	-60
P-CCPCH TS (3.84 Mcps TDD)		TS 0		TS 0	

The UE is initially in CELL_DCH state of cell 1.

SS transmits MEASUREMENT CONTROL message to request the UE to perform intra-frequency measurement. The key measurement parameters are as follow: measurement type = "intra-frequency measurement", measurement quantity = "PCCPCH RSCP", report criteria = "periodic reporting criteria", reporting interval = "64 seconds".UE shall transmit a MEASUREMENT REPORT message and another after 64 seconds.

SS transmits a new MEASUREMENT CONTROL message to request UE to perform intra-frequency measurement and report Event 1G. All intra-frequency cells are removed, and Cell 2 is included as new intra-frequency cell. 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 8.4.1.45-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the PCCPCH RSCP of cell 2 and indicating Cell 2 as a best cell. 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				The UE is in CELL_DCH of cell 1.
1		←	MEASUREMENT CONTROL	Intra-frequency measurement is configured.
2		→	MEASUREMENT REPORT	The message should be repeated after 64 seconds
3		→	MEASUREMENT REPORT	
4		←	MEASUREMENT CONTROL	Event 1G is configured
5				SS wait for 64seconds to verify that no MEASUREMENT REPORT message is received
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.45-1.
7		→	MEASUREMENT REPORT	UE report that Event 1G is triggered and cell 2 is the best cell
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 Content

MEASUREMENT CONTROL (Step 1)_(1.28 Mcps TDD)

Information Element	Value/remark
Measurement identity	16
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement objects list	
- CHOICE Intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- 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	TDD
- Primary CCPCH Info	
- CHOICE TDD option	1.28 Mcps TDD
- Cell parameters ID	Set to same cell parameters ID as used for cell 1
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	0
- Measurement quantity	P-CCPCH RSCP
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- PCCPCH 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	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64 sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodical reporting
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

[MEASUREMENT CONTROL \(Step 1\) \(3.84 Mcps TDD\)](#)

Information Element	Value/remark
Measurement identity	16
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement

- Intra-frequency measurement objects list	Remove no intra-frequency cells
- CHOICE Intra-frequency cell removal	
- New intra-frequency info list	
- 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	TDD
- Primary CCPCH Info	
- CHOICE TDD option	3.84 Mcps TDD
- CHOICE SyncCase	Sync Case 1
- Timeslot	0
- Cell parameters ID	Set to same cell parameters ID as used for cell 1
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	0
- Measurement quantity	P-CCPCH RSCP
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- PCCPCH 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	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64 sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodical reporting
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2 and 3) (~~1.28 Mcps~~-TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 16
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Cell measured results	
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if is absent
- cell parameters ID	Check to see if it is the same for cell 1
- PCCPCH RSCP	Check to see if is present and value is reasonable
- Pathloss	Check to see if is absent
Measured results on RACH	Check to see if is absent
Additional measured results	Check to see if is absent
Event results	Check to see if is absent

MEASUREMENT CONTROL (Step 4) (~~1.28 Mcps~~-TDD)

Information Element	Value/remark
Measurement identity	16
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency measurement objects list	
- CHOICE Intra-frequency cell removal	Remove all intra-frequency cells
- New intra-frequency info list	
- 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	TDD
- Primary CCPCH Info	Set to same cell parameters ID as used for cell 1
- 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	TDD
- Primary CCPCH Info	Set to same cell parameters ID as used for cell 2
- Cell for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter coefficient	0
- Measurement quantity	P-CCPCH RSCP
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- PCCPCH 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	1g
- 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	1 dB
- 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	Not Present

- 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 reporting mode	Acknowledged mode
- Transfer Mode	Event trigger
- Periodical or event trigger	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 7) (~~1.28 Mcps~~-TDD)

Information Element	Value/remark
Measurement identity	Check to see if set to 16
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Cell measured results	
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if is absent
- cell parameters ID	Check to see if it is the same for cell 1
- PCCPCH RSCP	Check to see if is present and value is reasonable
- Pathloss	Check to see if is absent
- Cell Identity	Check to see if is absent
- Cell synchronisation information	Check to see if is absent
- cell parameters ID	Check to see if it is the same for cell 2
- PCCPCH RSCP	Check to see if is present and value is reasonable
- Pathloss	Check to see if is absent
Measured results on RACH	Check to see if is absent
Additional measured results	Check to see if is absent
Event results	Check to see if is absent
- CHOICE event result	Check to see if set to "Intra-frequency measurement event results"
- Intra-frequency event identity	Check to see if set to "1g"
- Cell measurement event results	
- CHOICE mode	Check to see if set to "TDD"
- Cell parameters Id	Check to see if it is the same for cell 2

8.4.1.45.5 Test Requirement

After step 1, the UE shall transmit MEASUREMENT REPORT message periodically with the interval of 64 seconds.

After step 4, the UE shall not transmit any MEASUREMENT REPORT message.

After step 6, the UE shall transmit MEASUREMENT REPORT message, containing measured results for P-CCPCH RSCP. The 'Event results' IE contains event identity 1G.

CR-Form-v7	
CHANGE REQUEST	
# 34.123-1 CR 809 # rev - #	Current version: 5.7.1 #

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Proposed change affects: UICC apps# ME Radio Access Network Core Network

Title:	#	Tests for HCR TDD RAB combinations	
Source:	#	InterDigital Communications Corp.	
Work item code:	#	TEI	Date: # 05/07/04
Category:	#	F	Release: # Rel-4 and Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		F (correction)	2 (GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96 (Release 1996)
		B (addition of feature),	R97 (Release 1997)
		C (functional modification of feature)	R98 (Release 1998)
		D (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	#	Need to be able to test the HCR TDD RAB combinations in the 34.108 document
Summary of change:	#	Add section 18.2 Radio Bearer Tests for 3.84 Mcps TDD option thru 18.2.2.37, only those tests for single service HCR TDD RAB combinations are included at this time.
Consequences if not approved:	#	Will not be able to test the HCR TDD RABs in 34.108 without this change

Clauses affected:	#	18							
Other specs affected:	#	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table>	Y	N					Other core specifications #
		Y	N						
Test specifications									
O&M Specifications									
Other comments:	#								

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18.2 Radio Bearer Tests for 3.84 Mcps TDD option

18.2.1 General information for radio bearer tests (3.84 Mcps TDD)

The purpose of these radio bearer test cases is to test properly the Reference Radio Bearer configurations included in TS34.108 [9], clause 6.10.3 for 3.84 Mcps TDD option.

The applicability of radio bearer tests is dependent on the UE uplink and downlink radio access capabilities and UE support tele- and bearer-services.

18.2.1.1 Generic radio bearer test procedure for Single RB configuration

See 14.1.1 for test procedure

18.2.1.2 Generic test procedure for testing multi-RB configuration and simultaneous signalling

See 14.1.2 for test procedure

18.2.1.2a 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 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 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 2 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-subsequent 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 = $4 \times 320 = 1280$ bits) the UL RLC SDU size parameter should be set to 632 bits ($= 1280 \text{ bits} / (20 \text{ ms} / 10 \text{ ms}) - 8 \text{ bits}$).

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 signalling 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comments</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>	<--		<u>SYSTEM INFORMATION (BCCH)</u>	<u>Broadcast</u>
<u>2</u>	<--		<u>PAGING TYPE 1 (PCCH)</u>	<u>Paging (CS domain, TMSI)</u>
<u>3</u>	-->		<u>RRC CONNECTION REQUEST (CCCH)</u>	<u>RRC</u>
<u>4</u>	<--		<u>RRC CONNECTION SETUP (CCCH)</u>	<u>RRC</u>
<u>5</u>	-->		<u>RRC CONNECTION SETUP COMPLETE (DCCH)</u>	<u>RRC</u>
<u>6</u>	-->		<u>PAGING RESPONSE (DCCH)</u>	<u>RR</u>
<u>6a</u>	<--		<u>AUTHENTICATION REQUEST</u>	
<u>6b</u>	-->		<u>AUTHENTICATION RESPONSE</u>	
<u>6c</u>	<--		<u>SECURITY MODE COMMAND</u>	
<u>6d</u>	-->		<u>SECURITY MODE COMPLETE</u>	

PS paging procedure

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comments</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>	<--		<u>SYSTEM INFORMATION (BCCH)</u>	<u>Broadcast</u>
<u>2</u>	<--		<u>PAGING TYPE 1 (PCCH)</u>	<u>Paging (PS domain, P-TMSI)</u>
<u>3</u>	-->		<u>RRC CONNECTION REQUEST (CCCH)</u>	<u>RRC</u>
<u>4</u>	<--		<u>RRC CONNECTION SETUP (CCCH)</u>	<u>RRC</u>
<u>5</u>	-->		<u>RRC CONNECTION SETUP COMPLETE (DCCH)</u>	<u>RRC</u>
<u>6a</u>	-->		<u>SERVICE REQUEST (DCCH)</u>	<u>GMM</u>
<u>6b</u>	<--		<u>SECURITY MODE COMMAND</u>	<u>RRC see note 1</u>
<u>6c</u>	-->		<u>SECURITY MODE COMPLETE</u>	<u>RRC see note 1</u>

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.
7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
Case A: CS or PS radio bearers only				
A9	<		RADIO BEARER SETUP (DCCH)	RRC
A10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
Case B: CS + PS radio bearers				
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 are 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.
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	<--		<u>TRANSPORT FORMAT COMBINATION CONTROL (DCCH)</u>	RRC <u>Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test</u> <u>Here the UL TFS are restricted to test the simultaneous data on CS and PS RAB and SRB</u>
15b	<--		<u>CLOSE UE TEST LOOP (DCCH)</u>	TC <u>UE test mode 1</u> <u>RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.</u>
15c	-->		<u>CLOSE UE TEST LOOP COMPLETE (DCCH)</u>	TC
15d	<--		<u>Test data (DTCH 1) and Test data on DTCH 2</u>	<u>SS Sends the data on the CS RAB (DPCH). SS Sends the data on the PS RAB. (PDSCH)</u> <u>(Note 1)</u>
15e	<		<u>MEASUREMENT CONTROL (DCCH)</u>	<u>SS sends a MEASUREMENT CONTROL message simultaneously to the test data requesting periodic reporting at interval T2</u> <u>(Note 1)</u>
15f	-->		<u>Test data (DTCH 1) + Test Data (DTCH 2)</u>	<u>SS Receives the data on CS RAB, PS RAB and the Measurement Control Report.</u> <u>SS Shall get at least on measurement Control report.message</u> <u>(Note 1)</u>
	-->		<u>MEASUREMENT REPORT (DCCH)</u>	
16	<--		<u>OPEN UE TEST LOOP (DCCH)</u>	TC
17	-->		<u>OPEN UE TEST LOOP COMPLETE (DCCH)</u>	TC
18			<u>Repeat steps 11 to 17 for every sub-test.</u>	
19			<u>RB RELEASE (DCCH)</u>	RRC <u>Optional step</u>
20	<--		<u>DEACTIVATE RB TEST MODE (DCCH)</u>	TC <u>Optional step</u>
21	-->		<u>DEACTIVATE RB TEST MODE COMPLETE (DCCH)</u>	TC <u>Optional step</u>
<u>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.</u>				

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 gets 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)

<u>Information Element</u>	<u>Value/remark</u>
<u>New DSCH-RNTI</u>	<u>0000 0000 0000 0010B</u>
<u>RRC State indicator</u>	<u>CELL_DCH</u>
<u>RAB information for setup</u>	
- <u>RB mapping info</u>	
- <u>Information for each multiplexing option</u>	<u>1 RBMuxOptions</u>
- <u>RLC logical channel mapping indicator</u>	<u>Not Present</u>
- <u>Number of uplink RLC logical channels</u>	<u>1</u>
- <u>Uplink transport channel type</u>	<u>DCH</u>
- <u>UL Transport channel identity</u>	<u>1</u>
- <u>Logical channel identity</u>	<u>Not Present</u>
- <u>CHOICE RLC size list</u>	<u>Configured</u>
- <u>MAC logical channel priority</u>	<u>8</u>
- <u>Downlink RLC logical channel info</u>	
- <u>Number of downlink RLC logical channels</u>	<u>1</u>
- <u>Downlink transport channel type</u>	<u>DSCH</u>
- <u>DL DCH Transport channel identity</u>	<u>Not Present</u>
- <u>DL DSCH Transport channel identity</u>	<u>19</u>
- <u>Logical channel identity</u>	<u>1</u>
<u>Added or Reconfigured TrCH information list</u>	<u>1 DCH added, 1 DCH reconfigured</u>
<u>DL Transport channel information common for all transport channel</u>	
- <u>SCCPCH TFCS</u>	<u>Not Present</u>
- <u>CHOICE mode</u>	<u>TDD</u>
- <u>Individual DL CCTrCH information</u>	<u>This number is of which of multiple CCTrCHs as indicated in TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>DL TFCS Identity</u>	<u>TFCS ID 1 or 2</u>
- <u>Shared Channel Indicator</u>	<u>FALSE</u>
- <u>CHOICE DL parameters</u>	<u>Independent</u>
- <u>DL TFCS</u>	
- <u>CHOICE TFCS signalling</u>	<u>Split</u>
- <u>Split Type</u>	<u>Normal</u>
- <u>TFCS Field 1 information</u>	
- <u>CHOICE TFCS representation</u>	<u>Complete reconfiguration</u>
- <u>TFCS complete reconfigure</u>	
- <u>CHOICE CTFC Size</u>	
- <u>CTFC information</u>	<u>This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10.3.4</u>
- <u>CTFC</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Power offset information</u>	<u>Not present</u>
<u>Deleted TrCH information list</u>	<u>Not Present</u>
<u>Added or Reconfigured TrCH information list</u>	
- <u>Added or Reconfigured DL TrCH information</u>	
- <u>Downlink transport channel type</u>	<u>DSCH</u>
- <u>DL Transport channel identity</u>	<u>19</u>
- <u>CHOICE DL parameters</u>	<u>Explicit</u>
- <u>TFS</u>	
- <u>CHOICE Transport channel type</u>	<u>Dedicated transport channels</u>
- <u>Dynamic Transport format information</u>	
- <u>RLC Size</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Number of TBs and TTI List</u>	<u>(This IE is repeated for TFI number.)</u>
- <u>Transmission Time Interval</u>	<u>Not Present</u>
- <u>Number of Transport blocks</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Semi-static Transport Format information</u>	
- <u>Transmission time interval</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Type of channel coding</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Coding Rate</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>
- <u>Rate matching attribute</u>	<u>Reference to TS34.108 clause 6.10.3.4 Parameter Set</u>

<u>Information Element</u>	<u>Value/remark</u>
- CRC size	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- 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	
- CHOICE Mode	TDD
- CHOICE TDD Option	3.84 Mcps TDD
- UL target SIR	Not Present
-CHOICE UL OL PC info	Broadcast UL OL PC info (NULL)
- CHOICE mode	TDD
- Uplink Timing Advance Control	Not Present
- UL CCTrCH List	1 or 2 Reference to TS34.108 clause 6.10.3.4 Parameter Set
- TFCS ID	Set
- UL target SIR	1 or 2
- Timing info	0.0
- Activation time	Now
- Duration	Infinite
- Common timeslot info	
- 2 nd interleaver mode	Frame
- TFCI coding	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- Puncturing limit	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- Repetition period	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- Repetition length	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- Uplink DPCH timeslots and codes	
- Dynamic SF usage	FALSE
- First Individual timeslot info	
- Timeslot number	
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot number	(0..14)
- TFCI existence	TRUE
- Midamble Shift and burst type	
- Choice TDD option	3.84 Mcps TDD
- Choice Burst Type	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- Midamble Allocation Mode	Default midamble
- Midamble Configuration	3 or 4 based on burst type
- CHOICE TDD option	3.84 Mcps TDD (no data)
- First timeslot Code List	1..2
- Channelisation Code	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- CHOICE more timeslots	Reference to TS34.108 clause 6.10.3.4 Parameter Set
- UL CCTrCH List to Remove	If this test has only 1 CCTrCH Reference to TS34.108 clause 6.10.3.4 Parameter Set. If 2 CCTrCH then "Not Present"
- TFCS ID	2
CHOICE Mode	TDD (no data)
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	
- CHOICE Mode	TDD
- TPC Step Size	1
- MAC-d HFN initial value	Bit String(24)
- CHOICE Mode	TDD (no data)
- CHOICE Mode	TDD (no data)

<u>Information Element</u>	<u>Value/remark</u>
<ul style="list-style-type: none"> - CHOICE TDD option - Default DPCH Offset Value Downlink information for each radio link list - Downlink information for each radio link - Choice mode - Primary CCPCH info - CHOICE Mode - CHOICE TDD option - CHOICE SyncCase - Timeslot - Cell parameters ID - SCTD indicator - Downlink DPCH info for each RL - CHOICE Mode - DL CCTrCH List - TFCS ID - Timing info - Activation time - Duration - Common timeslot info - 2nd interleaver mode - TFCI coding - Puncturing limit - Repetition period - Repetition length - Downlink DPCH timeslots and codes 	<p>3.84 Mcps (no data) Not Present</p> <p>TDD</p> <p>TDD 3.84 Mcps Sync Case 1 PCCPCH timeslot (0..14) Same as cell (0..127) FALSE</p> <p>TDD 1 or 2 Reference to TS34.108 clause 6.10.3.4 Parameter Set Set 1 or 2</p> <p>Now Infinite</p> <p>Frame Reference to TS34.108 clause 6.10.3.4 Parameter Set Reference to TS34.108 clause 6.10.3.4 Parameter Set Reference to TS34.108 clause 6.10.3.4 Parameter Set Reference to TS34.108 clause 6.10.3.4 Parameter Set</p>
<ul style="list-style-type: none"> - First Individual timeslot info - Timeslot number - CHOICE TDD option - Timeslot number - TFCI existence - Midamble Shift and burst type - Choice TDD option - Choice Burst Type - Midamble Allocation Mode - Midamble Configuration - CHOICE TDD option - First timeslot channelisation codes - CHOICE codes representation - Channelisation codes bitmap 	<p>3.84 Mcps TDD (0..14) TRUE</p> <p>3.84 Mcps TDD Reference to TS34.108 clause 6.10.3.4 Parameter Set Default midamble 3 or 4 based on burst type 3.84 Mcps TDD (no data)</p> <p>Bitmap Bit string(16) Reference to TS34.108 clause 6.10.3.4 Parameter Set</p>
<ul style="list-style-type: none"> - CHOICE more timeslots 	<p>Reference to TS34.108 clause 6.10.3.4 Parameter Set</p>
<ul style="list-style-type: none"> - UL CCTrCH TPC List - UL TPC TFCS Identity - TFCS ID - Shared Channel Indicator - UL CCTrCH List to Remove - TFCS ID - SCCPCH information for FACH 	<p>1 or 2 Reference to TS34.108 clause 6.10.3.4 Parameter Set Set</p> <p>1 or 2 FALSE If this test has only 1 CCTrCH Reference to TS34.108 clause 6.10.3.4 Parameter Set. If 2 CCTrCH then "Not Present"</p> <p>2 Not Present</p>

18.2.2 Combinations on DPCH

18.2.2.1 Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH

Test to verify establishment and signalling of stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.1.

The test case is performed by running test case 9.4.1 (Location updating / accepted) using the stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.1.

18.2.2.1a Stand-alone UL:1.7 DL:1.7 kbps SRBs for DCCH (multiframe)

Test to verify establishment and signalling of stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.1a.

The test case is performed by running test case 9.4.1 (Location updating / accepted) using the stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.1a.

18.2.2.2 Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH

Test to verify establishment and signalling of stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.2.

The test case is performed by running test case 9.4.1 (Location updating / accepted) using the stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.2.

18.2.2.3 Stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH

Implicitly tested.

NOTE The stand-alone UL:13.6 DL:13.6 kbps SRBs for DCCH in TS 34.108, clause 6.10.3.4.1.3 is the default signalling radio bearer used in the generic setup procedure as specified in TS 34.108 clause 7.

18.2.2.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.4.1 Conformance requirement

The UE shall be able to establish the UTRAN requested radio bearers within the UE's signalled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entities according to the requested radio bearer configuration.

Reference(s)

3GPP TS 25.331, clause 8.2.1

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

18.2.2.4.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.4.

18.2.2.4.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	<u>TF0, bits</u>	<u>0x81(alt. 1x0)</u>	<u>0x103</u>	<u>0x60</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x103</u>	<u>1x60</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x81</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1, TF1)</u>

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	<u>TF0, bits</u>	<u>0x81(alt. 1x0)</u>	<u>0x103</u>	<u>0x60</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x103</u>	<u>1x60</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x81</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size</u> (note 2)	<u>Test data size</u> (note 2)
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4</u>	<u>RB5: 39 bits RB6: 103 bits RB7: 60 bits</u>	<u>RB5: 39 bits RB6: No data RB7: No data</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 81 bits RB6: 103 bits RB7: 60 bits</u>	<u>RB5: 81 bits RB6: 103 bits RB7: 60 bits</u>

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2 and UL_TFC3 are part of minimum set of TFCs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.4.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x81); RB6/TF1 (1x103); and RB7/TF1 (1x60).
3. At step 15 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 or RB7.
 - for sub-test 2: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS

18.2.2.4a Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.4a.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.4a.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.4a.

18.2.2.4a.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x148
	TF1, bits	1x39	1x53	1x60	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF0, TF1)
UL_TFC9	(TF3, TF2, TF0, TF1)
UL_TFC10	(TF4, TF3, TF0, TF1)
UL_TFC11	(TF5, TF4, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x148
	TF1, bits	1x39	1x53	1x60	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A
	TF5, 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, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF0, TF1)
DL_TFC9	(TF3, TF2, TF0, TF1)
DL_TFC10	(TF4, TF3, TF0, TF1)
DL_TFC11	(TF5, TF4, TF1, TF1)

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size</u> (note 2)	<u>Test data size</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7</u>	<u>RB5: 39 bits RB6: 103 bits RB7: 60 bits</u>	<u>RB5: 39 bits RB6: No data RB7: No data</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8</u>	<u>RB5: 42 bits RB6: 53 bits RB7: 60 bits</u>	<u>RB5: 42 bits RB6: 53 bits RB7: No data</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9</u>	<u>RB5: 55 bits RB6: 63 bits RB7: 60 bits</u>	<u>RB5: 55 bits RB6: 63 bits RB7: No data</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10</u>	<u>RB5: 75 bits RB6: 84 bits RB7: 60 bits</u>	<u>RB5: 75 bits RB6: 84 bits RB7: No data</u>
<u>5</u>	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 81 bits RB6: 103 bits RB7: 60 bits</u>	<u>RB5: 81 bits RB6: 103 bits RB7: 60 bits</u>
<u>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5 and UL_TFC6 are part of minimum set of TFCs.</u>						
<u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u>						

See clause 18.2.1.1 for test procedure.

18.2.2.4a.4 Test requirements

See 18.2.1.1 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 (1x39).

- for sub-test 2: RB5/TF2 (1x42) and RB6/TF1 (1x53)

- [for sub-test 3: RB5/TF3 \(1x55\) and RB6/TF2 \(1x63\)](#)
- [for sub-test 4: RB5/TF4 \(1x75\) and RB6/TF3 \(1x84\)](#)
- [for sub-test 5: RB5/TF5 \(1x81\), RB6/TF4 \(1x103\) and RB7/TF1 \(1x60\)](#)

3. [At step 15 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 or RB7.](#)
- [for sub-test 2,3 and 4: an RLC SDU on RB5 and RB6 having the same content as sent by SS; and no data shall be received on RB7.](#)
- [for sub-test 5: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS.](#)

[18.2.2.5 Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH](#)

[18.2.2.5.1 Conformance requirement](#)

[See clause 18.2.2.4.1.](#)

[18.2.2.5.2 Test purpose](#)

[To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.5.](#)

[18.2.2.5.3 Method of test](#)

[Uplink TFS:](#)

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x99	1x40	1x148
	TF2, bits	1x65	N/A	N/A	N/A

[Uplink TFCS:](#)

TFCI	(RB5, RB6, RB7,DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1, TF1)

[Downlink TFS:](#)

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x99	1x40	1x148
	TF2, bits	1x65	N/A	N/A	N/A

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, RB6, RB7, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size</u> (note)	<u>Test data size</u> (note)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 39 bits RB6: 99 bits RB7: 40 bits</u>	<u>RB5: 39 bits RB6: No data RB7: No data</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 65 bits RB6: 99 bits RB7: 40 bits</u>	<u>RB5: 65 bits RB6: 99 bits RB7: 40 bits</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.5.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x65); RB6/TF1 (1x99); and RB7/TF1 (1x40).
3. At step 15 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 or RB7.
 - for sub-test 2: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS.

18.2.2.5a Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.5a.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.5a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.5a.

18.2.2.5a.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x53	1x40	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x76	N/A	N/A
	TF4, bits	1x58	1x99	N/A	N/A
	TF5, bits	1x65	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF0, TF1)
UL_TFC9	(TF3, TF2, TF0, TF1)
UL_TFC10	(TF4, TF3, TF0, TF1)
UL_TFC11	(TF5, TF4, TF1, TF1)

Downlink TFS:

	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH	
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x53	1x40	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x76	N/A	N/A
	TF4, bits	1x58	1x99	N/A	N/A
	TF5, bits	1x65	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, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF0, TF1)
DL_TFC9	(TF3, TF2, TF0, TF1)
DL_TFC10	(TF4, TF3, TF0, TF1)
DL_TFC11	(TF5, TF4, TF1, TF1)

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size</u> (note 2)	<u>Test data size</u> (note 2)
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7</u>	<u>RB5: 39 bits RB6: 99 bits RB7: 40 bits</u>	<u>RB5: 39 bits RB6: No data RB7: No data</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8</u>	<u>RB5: 42 bits RB6: 53 bits RB7: 40 bits</u>	<u>RB5: 42 bits RB6: 53 bits RB7: No data</u>
3	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9</u>	<u>RB5: 55 bits RB6: 63 bits RB7: 40 bits</u>	<u>RB5: 55 bits RB6: 63 bits RB7: No data</u>
4	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10</u>	<u>RB5: 58 bits RB6: 76 bits RB7: 40 bits</u>	<u>RB5: 58 bits RB6: 76 bits RB7: No data</u>
5	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 65 bits RB6: 99 bits RB7: 40 bits</u>	<u>RB5: 65 bits RB6: 99 bits RB7: 40 bits</u>
<p><u>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5 and UL_TFC6 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u></p>						

See clause 18.2.1.1 for test procedure.

18.2.2.5a.4 Test requirements

See 18.2.1.1 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 (1x39).

- for sub-test 2: RB5/TF2 (1x42) and RB6/TF1 (1x53)
- for sub-test 3: RB5/TF3 (1x55) and RB6/TF2 (1x63)
- for sub-test 4: RB5/TF4 (1x58) and RB6/TF3 (1x76)
- for sub-test 5: RB5/TF5 (1x65), RB6/TF4 (1x99) and RB7/TF1 (1x40)

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 having the same content as sent by the SS; and no data shall be received on RB6 or RB7.
- for sub-test 2, 3 and 4: an RLC SDU on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 5: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by the SS.

18.2.2.6 Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.6.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.6.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.6.

18.2.2.6.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (RAB subflow #1)</u>	<u>RB6 (RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x75(alt. 1x0)</u>	<u>0x84</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x84</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x75</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x75(alt. 1x0)	0x84	0x148
	TF1, bits	1x39	1x84	1x148
	TF2, bits	1x75	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0)
DL_TFC3	(TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size	Test data size
					(note)	(note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 84 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 75 bits RB6: 84 bits	RB5: 75 bits RB6: 84 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.						

See clause 18.2.1.1 for test procedure.

18.2.2.6.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x75) and RB6/TF1 (1x84).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS.

18.2.2.7 Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.7.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.7.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.7.

18.2.2.7.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(RAB subflow #1)</u>	<u>RB6</u> <u>(RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x61 (alt. 1x0)</u>	<u>0x87</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x87</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x61</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Downlink TFS:

		<u>RB5</u> <u>(RAB subflow #1)</u>	<u>RB6</u> <u>(RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x61 (alt. 1x0)</u>	<u>0x87</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x87</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x61</u>	<u>N/A</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size</u> (note)	<u>Test data size</u> (note)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC3, UL TFC0, UL TFC3</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC4</u>	<u>RB5: 39 bits</u> <u>RB6: 87 bits</u>	<u>RB5: 39 bits</u> <u>RB6: No data</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC3, UL TFC0, UL TFC3</u>	<u>UL TFC0, UL TFC2, UL TFC3, UL TFC5,</u>	<u>RB5: 61 bits</u> <u>RB6: 87 bits</u>	<u>RB5: 61 bits</u> <u>RB6: 87 bits</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.7.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x61) and RB6/TF1 (1x87).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

18.2.2.7a Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.7a.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.7a.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.7a.

18.2.2.7a.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (RAB subflow #1)</u>	<u>RB6 (RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x61(alt. 1x0)</u>	<u>0x87</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x53</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x42</u>	<u>1x63</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>1x55</u>	<u>1x76</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>1x58</u>	<u>1x87</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>1x61</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, RB7, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF2, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF3, TF0)</u>
<u>UL_TFC5</u>	<u>(TF5, TF4, TF0)</u>
<u>UL_TFC6</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC7</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC8</u>	<u>(TF2, TF1, TF1)</u>
<u>UL_TFC9</u>	<u>(TF3, TF2, TF1)</u>
<u>UL_TFC10</u>	<u>(TF4, TF3, TF1)</u>
<u>UL_TFC11</u>	<u>(TF5, TF4, TF1)</u>

Downlink TFS:

		<u>RB5</u> <u>(RAB subflow #1)</u>	<u>RB6</u> <u>(RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x61 (alt. 1x0)</u>	<u>0x87</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x53</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x42</u>	<u>1x63</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>1x55</u>	<u>1x76</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>1x58</u>	<u>1x87</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>1x61</u>	<u>N/A</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, RB7, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF2, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF3, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF4, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF0, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF2, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF3, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size</u> (note 2)	<u>Test data size</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7</u>	<u>RB5: 39 bits RB6: 87 bits</u>	<u>RB5: 39 bits RB6: No data</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8</u>	<u>RB5: 42 bits RB6: 53 bits</u>	<u>RB5: 42 bits RB6: 53 bits</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9</u>	<u>RB5: 55 bits RB6: 63 bits</u>	<u>RB5: 55 bits RB6: 63 bits</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10</u>	<u>RB5: 58 bits RB6: 76 bits</u>	<u>RB5: 58 bits RB6: 76 bits</u>
<u>5</u>	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 61 bits RB6: 87 bits</u>	<u>RB5: 61 bits RB6: 87 bits</u>
NOTE 1: <u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5 and UL_TFC6 are part of minimum set of TFCs.</u>						
NOTE 2: <u>See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u>						

See clause 18.2.1.1 for test procedure.

18.2.2.7a.4 Test requirements

See 18.2.1.1 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 (1x39).

- for sub-test 2: RB5/TF2 (1x42) and RB6/TF1 (1x53)

- [for sub-test 3: RB5/TF3 \(1x55\) and RB6/TF2 \(1x63\)](#)
- [for sub-test 4: RB5/TF4 \(1x58\) and RB6/TF3 \(1x76\)](#)
- [for sub-test 5: RB5/TF5 \(1x61\) and RB6/TF4 \(1x87\)](#)

3. [At step 15 the UE shall return](#)

- [for sub-test 1: an RLC SDU on RB5 having the same content as sent by the SS; and no data shall be received on RB6.](#)
- [for sub-test 2 to 5: an RLC SDU on RB5 and RB6 having the same content as sent by the SS.](#)

[18.2.2.8 Conversational / speech / UL:6.7 DL:6.7 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[18.2.2.8.1 Conformance requirement](#)

[See clause 18.2.2.4.1.](#)

[18.2.2.8.2 Test purpose](#)

[To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.8.](#)

[18.2.2.8.3 Method of test](#)

[Uplink TFS:](#)

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x58(alt. 1x0)	0x76	0x148
	TF1, bits	1x39	1x76	1x148
	TF2, bits	1x58	N/A	N/A

[Uplink TFCS:](#)

TFCI	(RB5, RB6, DCCH)
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0)
UL_TFC3	(TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1)

[Downlink TFS:](#)

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x58(alt. 1x0)	0x76	0x148
	TF1, bits	1x39	1x76	1x148
	TF2, bits	1x58	N/A	N/A

[Downlink TFCS:](#)

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size</u>	<u>Test data size</u>
					<u>(note)</u>	<u>(note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 39 bits RB6: 76 bits</u>	<u>RB5: 39 bits RB6: No data</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 58 bits RB6: 76 bits</u>	<u>RB5: 58 bits RB6: 76 bits</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.8.4 Test requirements

See clause 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x58) and RB6/TF1 (1x76).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

18.2.2.9 Conversational / speech / UL:5.9 DL:5.9 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.9.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.9.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.9.

18.2.2.9.3 Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	<u>TF0, bits</u>	<u>0x55(alt. 1x0)</u>	<u>0x63</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x63</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x55</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

TFCI	(RB5, RB6, DCCH)
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	<u>TF0, bits</u>	<u>0x55 (alt. 1x0)</u>	<u>0x63</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x63</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x55</u>	<u>N/A</u>	<u>N/A</u>

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size	Test data size
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	(note) <u>RB5: 39 bits</u> <u>RB6: 63 bits</u>	(note) <u>RB5: 39 bits</u> <u>RB6: No data</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5,</u>	<u>RB5: 55 bits</u> <u>RB6: 63 bits</u>	<u>RB5: 55 bits</u> <u>RB6: 63 bits</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.9.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x55) and RB6/TF1 (1x63).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

18.2.2.10 Conversational / speech / UL:5.15 DL:5.15 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

18.2.2.10.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.10.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.10.

18.2.2.10.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (RAB subflow #1)</u>	<u>RB6 (RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x49 (alt. 1x0)</u>	<u>0x54</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x54</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x49</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x49 (alt. 1x0)	0x54	0x148
	TF1, bits	1x39	1x54	1x148
	TF2, bits	1x49	N/A	N/A

Downlink TFCS:

TFCS	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0)
DL_TFC3	(TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCSs	UL RLC SDU size	Test data size
					(note)	(note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 54 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 49 bits RB6: 54 bits	RB5: 49 bits RB6: 54 bits
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.						

See clause 18.2.1.1 for test procedure.

18.2.2.10.4 Test requirements

See 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x49) and RB6/TF1 (1x54).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

18.2.2.11 Conversational / speech / UL:4.75 DL:4.75 kbps / CS RAB + UL:1.7 DL:1.7 kbps SRBs for DCCH

18.2.2.11.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.11.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.11.

18.2.2.11.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(RAB subflow #1)</u>	<u>RB6</u> <u>(RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x49(alt.1x0)</u>	<u>0x53</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x53</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x42</u>	<u>N/A</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Downlink TFS:

		<u>RB5</u> <u>(RAB subflow #1)</u>	<u>RB6</u> <u>(RAB subflow #2)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x42 (alt.1x0)</u>	<u>0x53</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x39</u>	<u>1x53</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>1x42</u>	<u>N/A</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, RB6, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF1, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF0, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size</u> (note)	<u>Test data size</u> (note)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC3, UL TFC0, UL TFC3</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC4</u>	<u>RB5: 39 bits</u> <u>RB6: 53 bits</u>	<u>RB5: 39 bits</u> <u>RB6: No data</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC3, UL TFC0, UL TFC3</u>	<u>UL TFC0, UL TFC2, UL TFC3, UL TFC5,</u>	<u>RB5: 42 bits</u> <u>RB6: 53 bits</u>	<u>RB5: 42 bits</u> <u>RB6: 53 bits</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.11.4 Test requirements

See clause 18.2.1.1 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x42) and RB6/TF1 (1x53).
3. At step 15 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.
 - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

18.2.2.12 Conversational / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.12.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.12.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.12.

18.2.2.12.3 Method of test

<u>Uplink RLC</u> <u>TM RLC</u> <u>Segmentation indication</u>	<u>FALSE</u>
<u>Downlink RLC</u> <u>TM RLC</u> <u>Segmentation indication</u>	<u>FALSE</u>

Uplink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(28.8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x576</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x576</u>	<u>1x148</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF0, TF1)</u>
<u>UL_TFC3</u>	<u>(TF1, TF1)</u>

Downlink TFS:

		<u>RB5</u> <u>(28.8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x576</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x576</u>	<u>1x148</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u> <small>(note 1)</small>	<u>UL RLC SDU size (bits)</u> <small>(note2)</small>	<u>Test data size (bits)</u> <small>(note 2)</small>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 576</u>	<u>RB5: 576</u>

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC2 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 clause 18.2.1.1 for test procedure.

18.2.2.12.4 Test requirements

See clause 18.2.1.1 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 (1x576).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS.

18.2.2.13 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.13.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.13.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.13.

18.2.2.13.3 Method of test

Initial Conditions

The following RLC Info parameter values shall be set by the SS:

<u>Uplink RLC</u> <u>TM RLC</u> <u>Transmission RLC discard</u> <u>CHOICE SDU</u> <u>Discard Mode</u> <u>Timer based</u> <u>no explicit</u> <u>Timer discard</u> <u>Segmentation indication</u>	 <u>100ms</u> <u>FALSE</u>
<u>Downlink RLC</u> <u>TM RLC</u> <u>Segmentation indication</u>	 <u>FALSE</u>
<u>NOTE:</u> 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:

	<u>TFI</u>	<u>RB5</u> <u>(64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x640</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>2x640</u>	<u>1x148</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF0, TF1)</u>
<u>UL_TFC3</u>	<u>(TF1, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x640	0x148
	<u>TF1, bits</u>	2x640	1x148

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	(TF0, TF0)
<u>DL_TFC1</u>	(TF1, TF0)
<u>DL_TFC2</u>	(TF0, TF1)
<u>DL_TFC3</u>	(TF1, TF1)

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 640</u>	<u>RB5: 2x640</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See clause 18.2.1.1 for test procedure.

18.2.2.13.4 Test requirements

See clause 18.2.1.1 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 (2x640).
3. At step 15 the UE shall return
 - for sub-test 1: two RLC SDUs on RB5 having the same content as sent by SS.

18.2.2.14 Conversational / unknown / UL:32 DL:32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.14.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.14.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.14.

18.2.2.14.3 Method of test

Initial Conditions

The following RLC Info parameter values shall be set by the SS:

Uplink RLC TM RLC Segmentation indication	FALSE
Downlink RLC TM RLC Segmentation indication	FALSE

Uplink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x640	0x148
	<u>TF1, bits</u>	1x640	1x148

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	(TF0, TF0)
<u>UL_TFC1</u>	(TF1, TF0)
<u>UL_TFC2</u>	(TF0, TF1)
<u>UL_TFC3</u>	(TF1, TF1)

Downlink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x640	0x148
	<u>TF1, bits</u>	1x640	1x148

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	(TF0, TF0)
<u>DL_TFC1</u>	(TF1, TF0)
<u>DL_TFC2</u>	(TF0, TF1)
<u>DL_TFC3</u>	(TF1, TF1)

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 640</u>	<u>RB5: 640</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

[See 18.2.1.1 for test procedure.](#)

[18.2.2.14.4 Test requirements](#)

- [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 \(1x640\).](#)
- [3. At step 15 the UE shall return](#)
 - [- for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS.](#)

[18.2.2.15 Streaming / unknown / UL:14.4/DL:14.4 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH](#)

[18.2.2.15.1 Conformance requirement](#)

[See 18.2.2.4.1.](#)

[18.2.2.15.2 Test purpose](#)

[To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.15.](#)

[18.2.2.15.3 Method of test](#)

[Uplink TFS:](#)

	TFI	RB5 (14.4 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148

[Uplink TFCS:](#)

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF0, TF1)
UL_TFC3	(TF1, TF1)

[Downlink TFS:](#)

	TFI	RB5 (14.4 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148

[Downlink TFCS:](#)

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 576</u>	<u>RB5: 576</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.15.4 Test requirements

See 18.2.1.1 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 (1x576).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS.

18.2.2.16 Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.16.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.16.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.16.

18.2.2.16.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (28.8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x576</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x576</u>	<u>1x148</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF0, TF1)</u>
<u>UL_TFC3</u>	<u>(TF1, TF1)</u>

Downlink TFS:

		<u>RB5 (28.8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x576</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x576</u>	<u>1x148</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 576</u>	<u>RB5: 576</u>

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC2 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 18.2.1.1 for test procedure.

18.2.2.16.4 Test requirements

See 18.2.1.1 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 (1x576).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS.

18.2.2.17 Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.17.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.17.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.17.

18.2.2.17.3 Method of test

Initial Conditions

The following RLC Info parameter values 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 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:

	<u>TFI</u>	<u>RB5</u> (57.6 kbps)	<u>DCCH</u>
TFS	<u>TF0, bits</u>	0x576	0x148
	<u>TF1, bits</u>	1x576	1x148
	<u>TF2, bits</u>	2x576	N/A
	<u>TF3, bits</u>	3x576	N/A
	<u>TF4, bits</u>	4x576	N/A

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	(TF0, TF0)
<u>UL_TFC1</u>	(TF1, TF0)
<u>UL_TFC2</u>	(TF2, TF0)
<u>UL_TFC3</u>	(TF3, TF0)
<u>UL_TFC4</u>	(TF4, TF0)
<u>UL_TFC5</u>	(TF0, TF1)
<u>UL_TFC6</u>	(TF1, TF1)
<u>UL_TFC7</u>	(TF2, TF1)
<u>UL_TFC8</u>	(TF3, TF1)
<u>UL_TFC9</u>	(TF4, TF1)

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(57.6 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x576</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x576</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x576</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x576</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x576</u>	<u>N/A</u>

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5,</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 576</u>	<u>RB5: 576</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 576</u>	<u>RB5: 2x576</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 576</u>	<u>RB5: 3x576</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 576</u>	<u>RB5: 4x576</u>
<u>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</u>						
<u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u>						

See 18.2.1.1 for test procedure.

18.2.2.17.4 Test requirements

See 18.2.1.1 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 (1x576).
- for sub-test 2: RB5/TF2 (2x576) or RB5/TF1 (1x576).
- for sub-test 3: RB5/TF3 (3x576) or RB5/TF1 (1x576).
- for sub-test 4: RB5/TF4 (4x576) or RB5/TF1 (1x576).

3. At step 15 the UE shall return

- for sub-test 1: one RLC SDU on RB5 having the same content as sent by SS.
- for sub-test 2: two RLC SDU on RB5 having the same content as sent by SS.
- for sub-test 3: three RLC SDU on RB5 having the same content as sent by SS.
- for sub-test 4: four RLC SDU on RB5 having the same content as sent by SS.

18.2.2.18 Void

18.2.2.19 Void

18.2.2.20 Void

18.2.2.21 Void

18.2.2.22 Void

18.2.2.23 Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.23.1 Interactive or background / UL:32 DL:8 kbps / PS RAB / (Payload size 320)

18.2.2.23.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.23.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23 for uplink payload size 320 case.

18.2.2.23.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC1</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.23.1.4 Test requirements

See 18.2.1.1 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).
3. At step 15 the UE shall return
 - for sub-test 1 and 2: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.23.2 Interactive or background / UL:32 DL:8 kbps / PS RAB / Payload size 128

18.2.2.23.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.23.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23 for the uplink payload size 128 case.

18.2.2.23.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>5x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC1</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 632</u>	<u>RB5: 312</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.23.2.4 Test requirements

See 18.2.1.1 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 (1x144).

- for sub-test 2: RB5/TF2 (5x144).

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 2 times plus 8 lsb's of the DL RLC SDU sent by the SS.

18.2.2.23a Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.23a.1 Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 40 ms TTI

18.2.2.23a.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.23a.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23a, for the uplink 40 ms TT case.

18.2.2.23a.1.3 Method of test

See 18.2.1.1 for test procedure.

Uplink TFS:

	<u>TFI</u>	<u>RB5 (8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>

Uplink TFCS:

<u>TFCI</u>	<u>(8 kbps RAB, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF0, TF1)</u>
<u>UL_TFC3</u>	<u>(TF1, TF1)</u>

Downlink TFS:

		<u>RB5 (8 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>

Downlink TFCS:

<u>TFCI</u>	<u>(8 kbps RAB, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF0, TF1)</u>
<u>DL_TFC3</u>	<u>(TF1, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under Test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCS</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2,</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3</u>	<u>RB5: 312</u>	<u>RB5: 312</u>

NOTE: 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 DL TFS size 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 uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).

18.2.2.23a.1.4 Test requirements

See 18.2.1.1 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).
3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.23a.2 Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 80 ms TTI

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23a, for the uplink 80 ms TTI case.

See test case 18.2.2.23.2 for test procedure and test requirement.

18.2.2.23b Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.23b.1 Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 320.

18.2.2.23b.1.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.23b.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23b, for the uplink payload size 320 case.

18.2.2.23b.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (16 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A

Downlink TFCS:

<u>TFCS</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCS</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC3, UL_TFC3</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC3,</u> <u>UL_TFC4</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC3, UL_TFC3</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC2,</u> <u>UL_TFC3,</u> <u>UL_TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC3 are part of minimum set of TFCS.

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 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).

See 18.2.1.1 for test procedure.

18.2.2.23b.1.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.

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).

3. At step 15 the UE shall return

- for sub-test 1 and 2: an RLC SDU on RB5 having the same content as sent by the SS.

18.2.2.23b.2 Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 128.

18.2.2.23b.2.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.23b.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23b, for the uplink payload size 128 case.

18.2.2.23b.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (16 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>5x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC3, UL TFC3</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC3,</u> <u>UL TFC4</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC3, UL TFC3</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC2,</u> <u>UL TFC3,</u> <u>UL TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<p>NOTE 1: <u>UL TFC0, UL TFC1 and UL TFC3 are part of minimum set of TFCs.</u></p> <p>NOTE 2: <u>See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u> <u>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 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).</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.23b.2.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x144).
 - for sub-test 2: RB5/TF2 (5x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as sent by the SS.

18.2.2.23c Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.23c.1 Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 320.

18.2.2.23c.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.23c.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23c the uplink payload size 320 case.

18.2.2.23c.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC5, UL TFC5</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC5,</u> <u>UL TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC5, UL TFC5</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC2,</u> <u>UL TFC5,</u> <u>UL TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC5, UL TFC5</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC3,</u> <u>UL TFC5,</u> <u>UL TFC8</u>	<u>RB5: 952</u>	<u>RB5: 952</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC5, UL TFC5</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC4,</u> <u>UL TFC5,</u> <u>UL TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<p><u>NOTE 1: UL TFC0, UL TFC1 and UL TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u> <u>For 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 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).</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.23c.1.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
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 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.23c.2 Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 128.

18.2.2.23c.2.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.23c.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23c, for the uplink payload size 128 case.

18.2.2.23c.2.3 Method of test

Uplink TFS:

	TFI	RB5 (16 kbps)	DCCH
TFS	TF0, bits	0x144	0x148
	TF1, bits	1x144	1x148
	TF2, bits	5x144	N/A
	TF3, bits	7x144	N/A
	TF4, bits	10x144	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 (32 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

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:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC5, UL_TFC5</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC5,</u> <u>UL_TFC6</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC5, UL_TFC5</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC2,</u> <u>UL_TFC5,</u> <u>UL_TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC5, UL_TFC5</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC3,</u> <u>UL_TFC5,</u> <u>UL_TFC8</u>	<u>RB5: 1784</u>	<u>RB5: 952</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC5, UL_TFC5</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC4,</u> <u>UL_TFC5,</u> <u>UL_TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<p><u>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u></p> <p><u>For 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 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).</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.23c.2.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x144).
 - for sub-test 2: RB5/TF2 (5x144).
 - for sub-test 3: RB5/TF2 (7x144).
 - for sub-test 4: RB5/TF2 (10x144).

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as sent by the SS.
- for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 832 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 4: an RLC SDU on RB5 having the same content as sent by the SS.

18.2.2.23d Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI)
+ UL:3.4 DL:3.4 kbps SRBs for DCCH.

18.2.2.23d.1 Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI)
+ UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 320.

18.2.2.23d.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.23d.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23d, for the uplink payload size of 320 case.

18.2.2.23d.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC3, UL_TFC3</u>	<u>UL_TFC0,</u> <u>UL_TFC1,</u> <u>UL_TFC3,</u> <u>UL_TFC4</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, UL_TFC0</u> <u>DL_TFC3, UL_TFC3</u>	<u>UL_TFC0,</u> <u>UL_TFC2,</u> <u>UL_TFC3,</u> <u>UL_TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
For 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 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).

See 18.2.1.1 for test procedure.

18.2.2.23d.1.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
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).
3. At step 15 the UE shall return
 - for sub-test 1 to 2: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.23d Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI)
+ UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload size 128.

18.2.2.23d.2.1 Conformance requirement

See clause 18.2.2.4.1.

18.2.2.23d.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.23d, for the uplink payload size 128 case.

18.2.2.23d.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (16 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>5x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF0, TF1)</u>
<u>DL_TFC4</u>	<u>(TF1, TF1)</u>
<u>DL_TFC5</u>	<u>(TF2, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC3, UL TFC3</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC3,</u> <u>UL TFC4</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, UL TFC0</u> <u>DL TFC3, UL TFC3</u>	<u>UL TFC0,</u> <u>UL TFC1,</u> <u>UL TFC2,</u> <u>UL TFC3,</u> <u>UL TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>

NOTE 1: UL TFC0, UL TFC1 and UL TFC3 are part of minimum set of TFCs.
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 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).

See 18.2.1.1 for test procedure.

18.2.2.23d.2.4 Test requirements

See 18.2.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
2. At step 15 the UE transmitted transport format shall be
 - for sub-test 1: RB5/TF1 (1x144).
 - for sub-test 2: RB5/TF2 (5x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as sent by the SS.

18.2.2.24 Void

18.2.2.25 Interactive or background / UL:32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.25.1 Interactive or background / UL:32 DL: 64 kbps / PS RAB / Payload size 320

18.2.2.25.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.25.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.25 for the uplink payload size of 320 case.

18.2.2.25.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 952	RB5: 952
4	DL_TFC4	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 1272	RB5: 1272

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

[See 18.2.1.1 for test procedure.](#)

[18.2.2.25.1.4 Test requirements](#)

[See 18.2.1.1 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 and 3: RB5/TF1 \(1x336\).](#)
 - [for sub-test 2 and 4: RB5/TF1 \(2x336\).](#)
3. [At step 15 the UE shall return](#)
 - [for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.](#)

[18.2.2.25.2 Interactive or background / UL:32 DL: 64 kbps / PS RAB / Payload 128](#)

[18.2.2.25.2.1 Conformance requirement](#)

[See 18.2.2.4.1.](#)

[18.2.2.25.2.2 Test purpose](#)

[Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.25 for the uplink payload 128 case.](#)

[18.2.2.25.2.3 Method of test](#)

[Uplink TFS:](#)

	<u>TFI</u>	<u>RB5</u> <u>(32 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>5x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF0, TF1)</u>
<u>UL_TFC4</u>	<u>(TF1, TF1)</u>
<u>UL_TFC5</u>	<u>(TF2, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL_TFC3</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4</u>	<u>RB5: 1016</u>	<u>RB5: 952</u>
4	<u>DL_TFC4</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3</u>	<u>UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.25.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (5x144).
 - for sub-test 3: RB5/TF1 (1x144).
 - for sub-test 4: RB5/TF2 (5x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 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 same content as 1 times plus 64 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.26 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.26.1 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 320, Physical Configuration 1

18.2.2.26.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.26.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.26 for the uplink payload 320 case with physical configuration 1.

18.2.2.26.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>1148 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.48 (alt. 0.44)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u> <small>(note 1)</small>	<u>UL RLC SDU size (bits)</u> <small>(note 2)</small>	<u>Test data size (bits)</u> <small>(note 2)</small>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 952</u>	<u>RB5: 952</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>

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 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.

See 18.2.1.1 for test procedure.

18.2.2.26.1.4 Test requirements

See 18.2.1.1 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 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.26.2 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 128, Physical Configuration 2

18.2.2.26.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.26.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.26 for the uplink payload 128 case with physical configuration 2.

18.2.2.26.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>3x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>10x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2784 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 760</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 1784</u>	<u>RB5: 952</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<p><u>NOTE 1: UL TFC0, UL TFC1 and UL TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u> <u>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 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.</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.26.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (3x144).
 - for sub-test 3: RB5/TF3 (7x144).
 - for sub-test 4: RB5/TF4 (10x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 128 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 832 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.27 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.27.1 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 320, Physical Configuration 1

18.2.2.27.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.27.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.27 for the uplink payload 320 case with physical configuration 1.

18.2.2.27.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>1148 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.48 (alt. 0.44)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 8 codes x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2192 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>Puncturing limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 1912</u>	<u>RB5: 1272</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
<p><u>NOTE 1: UL TFC0, UL TFC1, and UL TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u></p> <p><u>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 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.</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.27.1.4 Test requirements

See 18.2.1.1 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 same content as 1 times plus 640 lsb's of the DL RLC SDU sent by the SS.

[18.2.2.27.2 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 128, Physical Configuration 2](#)

[18.2.2.27.2.1 Conformance requirement](#)

See [18.2.2.4.1](#).

[18.2.2.27.2.2 Test purpose](#)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.27 for the uplink payload 128 case with physical configuration 2.

[18.2.2.27.2.3 Method of test](#)

[Uplink TFS:](#)

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x144	0x148
	TF1, bits	1x144	1x148
	TF2, bits	3x144	N/A
	TF3, bits	7x144	N/A
	TF4, bits	10x144	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)

[Physical channel parameters](#)

DPCH Uplink	Physical Configuration 2
Midamble	512 chips
Codes and time slots	SF2 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot
Max. Number of data bits/radio frame	2784 bits
TFCI code word	16 bits
TPC	2 bits
Puncturing Limit	1

Downlink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 4 codes x 2 time slots + SF16 x 3 codes x 2 time slots</u>
<u>Max. Number of data bits/radio frame</u>	<u>3848 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>Puncturing limit</u>	<u>0.84</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 760</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 1784</u>	<u>RB5: 1272</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC5, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
<p><u>NOTE 1: UL TFC0, UL TFC1, and UL TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u> <u>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 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.</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.27.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (3x144).
 - for sub-test 3: RB5/TF3 (7x144).
 - for sub-test 4: RB5/TF4 (10x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 128 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 512 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.28 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.28.1 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 320, Physical Configuration 1

18.2.2.28.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.28.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.28 for the uplink payload 320 case with physical configuration 1.

18.2.2.28.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>

Uplink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 timeslot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2064 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.44 (alt. 0.40)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 8 codes x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2192 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>Puncturing limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.28.1.4 Test requirements

See 18.2.1.1 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).
3. At step 15 the UE shall return
 - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.28.2 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / Payload 128, Physical Configuration 2

18.2.2.28.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.28.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.28 for the uplink payload 128 case with physical configuration 2.

18.2.2.28.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>14x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>20x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 2 timeslots + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>5376 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

DPCCH Downlink		<u>Physical Configuration 2</u>
	<u>Midamble</u>	256 chips
	<u>Codes and time slots</u>	SF16 x 4 codes x 2 time slots + SF16 x 3 codes x 2 time slots
	<u>Max. Number of data bits/radio frame</u>	3848 bits
	<u>TFCI code word</u>	16 bits
	<u>Puncturing limit</u>	0.84

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 888</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 1784</u>	<u>RB5: 1272</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.28.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (7x144).
 - for sub-test 3: RB5/TF3 (14x144).
 - for sub-test 4: RB5/TF4 (20x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 256 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 512 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.29 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

18.2.2.29.1 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / Payload 320

18.2.2.29.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.29.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.29 for the uplink payload 320 case with physical configuration 1.

18.2.2.29.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>1148 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.48 (alt. 0.44)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (144 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>9x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 1912</u>	<u>RB5: 1272</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
5	<u>DL TFC5</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 2872</u>	<u>RB5: 2872</u>

NOTE 1: UL TFC0, UL TFC1 and UL TFC5 are part of minimum set of TFCs.
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 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.

See 18.2.1.1 for test procedure.

18.2.2.29.1.4 Test requirements

See 18.2.1.1 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).
 - for sub-test 5: RB5/TF3 (3x336) or RB5/TF1 (1x336).

3. At step 15 the UE shall return

- for sub-test 1, 2, 4 and 5: 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 same content as 1 times plus 640 lsb's of the DL RLC SDU sent by the SS.

18.2.2.29.2 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / Payload 128, Physical Configuration 2

18.2.2.29.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.29.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.29 for the uplink payload 128 case with physical configuration 2.

18.2.2.29.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>3x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>10x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2784 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (144 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>9x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 760</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
5	<u>DL TFC5</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 3576</u>	<u>RB5: 2872</u>
<p><u>NOTE 1: UL TFC0, UL TFC1 and UL TFC5 are part of minimum set of TFCs.</u></p> <p><u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u></p> <p><u>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 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.</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.29.2.4 Test requirements

See 18.2.1.1 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 (1x144).
- for sub-test 2: RB5/TF2 (3x144).
- for sub-test 3: RB5/TF4 (10x144).
- for sub-test 4: RB5/TF4 (10x144).
- for sub-test 5: RB5/TF3 (7x144).

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 128 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 3 and 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
- for sub-test 5: an RLC SDU on RB5 having the same content as 1 times plus 712 lsb's of the DL RLC SDU sent by the SS.

18.2.2.30 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

18.2.2.30.1 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / Payload 320, TTI 20 ms

18.2.2.30.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.30.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.30 for the uplink payload 320, TTI 20 ms case.

18.2.2.30.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (144 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>9x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF5, TF0)</u>
<u>UL_TFC6</u>	<u>(TF0, TF1)</u>
<u>UL_TFC7</u>	<u>(TF1, TF1)</u>
<u>UL_TFC8</u>	<u>(TF2, TF1)</u>
<u>UL_TFC9</u>	<u>(TF3, TF1)</u>
<u>UL_TFC10</u>	<u>(TF4, TF1)</u>
<u>UL_TFC11</u>	<u>(TF5, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> (144 kbps)	<u>DCCH</u>
TFS	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A
	<u>TF5, bits</u>	9x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
4	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
5	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 2872</u>	<u>RB5: 2872</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.30.1.4 Test requirements

See 18.2.1.1 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/TF5 (9x336).
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.

18.2.2.30.2 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / Payload 128, TTI 40 ms

18.2.2.30.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.30.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.30 for the uplink payload 128, TTI 40 ms case.

18.2.2.30.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (144 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>10x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>20x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>30x144</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>45x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF5, TF0)</u>
<u>UL_TFC6</u>	<u>(TF0, TF1)</u>
<u>UL_TFC7</u>	<u>(TF1, TF1)</u>
<u>UL_TFC8</u>	<u>(TF2, TF1)</u>
<u>UL_TFC9</u>	<u>(TF3, TF1)</u>
<u>UL_TFC10</u>	<u>(TF4, TF1)</u>
<u>UL_TFC11</u>	<u>(TF5, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(144 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>9x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7</u>	<u>RB5: 376</u>	<u>RB5: 312</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8</u>	<u>RB5: 1272</u>	<u>RB5: 632</u>
3	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 1272</u>
4	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10</u>	<u>RB5: 3832</u>	<u>RB5: 2552</u>
5	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 5752</u>	<u>RB5: 2872</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.30.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (10x144).
 - for sub-test 3: RB5/TF3 (20x144).
 - for sub-test 4: RB5/TF4 (30x144).
 - for sub-test 5: RB5/TF5 (45x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 640 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 1280 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 4: an RLC SDU on RB5 having the same content as 1 times plus 1280 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 5: an RLC SDU on RB5 having the same content as 1 times plus 2880 lsb's of the DL RLC SDU sent by the SS.

18.2.2.31 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

18.2.2.31.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH/ Payload 320, 10 ms TTI Down Link, Physical Configuration 1

18.2.2.31.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.31.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.31 for the uplink payload 320, the downlink 10 ms TTI, and physical configuration 1 case.

18.2.2.31.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>1148 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.48 (alt. 0.44)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(256 kbps, 10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF0, TF1)</u>
<u>DL_TFC6</u>	<u>(TF1, TF1)</u>
<u>DL_TFC7</u>	<u>(TF2, TF1)</u>
<u>DL_TFC8</u>	<u>(TF3, TF1)</u>
<u>DL_TFC9</u>	<u>(TF4, TF1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCS Under test</u>	<u>Uplink TFCS Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 1912</u>	<u>RB5: 1272</u>
4	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>

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 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.

[See 18.2.1.1 for test procedure.](#)

[18.2.2.31.1.4 Test requirements](#)

[See 18.2.1.1 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 same content as 1 times plus 640 lsb's of the DL RLC SDU sent by the SS.](#)

[18.2.2.31.2 Interactive or background / UL:64 DL:256 kbps / PS RAB / Payload 128, 20 ms TTI Down Link, Physical Configuration 2](#)

[18.2.2.31.2.1 Conformance requirement](#)

[See 18.2.2.4.1.](#)

[18.2.2.31.2.2 Test purpose](#)

[Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.31 for the uplink payload 128, the downlink 20 ms TTI, and physical configuration 2 case.](#)

[18.2.2.31.2.3 Method of test](#)

[Uplink TFS:](#)

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x144	0x148
	TF1, bits	1x144	1x148
	TF2, bits	3x144	N/A
	TF3, bits	7x144	N/A
	TF4, bits	10x144	N/A

[Uplink TFCS:](#)

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2784 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (256 kbps, 20ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x336</u>	<u>N/A</u>
	<u>TF6, bits</u>	<u>16x336</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF0, TF1)</u>
<u>DL_TFC8</u>	<u>(TF1, TF1)</u>
<u>DL_TFC9</u>	<u>(TF2, TF1)</u>
<u>DL_TFC10</u>	<u>(TF3, TF1)</u>
<u>DL_TFC11</u>	<u>(TF4, TF1)</u>
<u>DL_TFC12</u>	<u>(TF5, TF1)</u>
<u>DL_TFC13</u>	<u>(TF6, TF1)</u>

Sub-tests: _____

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 376	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 760	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1784	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, 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_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_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.31.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (3x144).
 - for sub-test 3: RB5/TF3 (7x144).
 - for sub-test 4 to 6: RB5/TF4 (10x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 128 lsb's of the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 512 lsb's of the DL RLC SDU sent by the SS.

- for sub-test 4 to 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.32 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

18.2.2.32.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / Payload 320, 10 ms TTI Down Link, Physical Configuration 1

18.2.2.32.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.32.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.32 for the uplink payload 320, the downlink 10 ms TTI, and physical configuration 1 case.

18.2.2.32.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>3x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>4x336</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>1148 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>0.48 (alt. 0.44)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(384 kbps, 10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x336</u>	<u>N/A</u>

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>	<u>Physical Configuration 1</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF16 x 8 codes x 3 time slots</u>
<u>Max. Number of data bits/radio frame</u>	<u>6608 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>Puncturing Limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 1)	<u>Test data size (bits)</u> (note 1)
1	<u>DL TFC1</u>	<u>UL TFC1</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC5, UL TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL TFC2</u>	<u>UL TFC2</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC2, UL TFC5, UL TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL TFC3</u>	<u>UL TFC3</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC3, UL TFC5, UL TFC8</u>	<u>RB5: 1912</u>	<u>RB5: 1272</u>
4	<u>DL TFC4</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
5	<u>DL TFC5</u>	<u>UL TFC4</u>	<u>DL TFC0, DL TFC6, UL TFC0, UL TFC5</u>	<u>UL TFC0, UL TFC1, UL TFC4, UL TFC5, UL TFC9</u>	<u>RB5: 3832</u>	<u>RB5: 3832</u>

NOTE 1: UL TFC0, UL TFC1 and UL TFC5 are part of minimum set of TFCs.
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 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.

See 18.2.1.1 for test procedure.

18.2.2.32.1.4 Test requirements

See 18.2.1.1 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 and 5: RB5/TF4 (4x336) or RB5/TF1 (1x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 and 5: 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 same content as 1 times plus 640 lsb's of the DL RLC SDU sent by the SS.

18.2.2.32.2 Interactive or background / UL:64 DL:384 kbps / PS RAB / Payload 128, 20 ms TTI Down Link, Physical Configuration 2

18.2.2.32.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.32.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.32 for the uplink payload 128, the downlink 20 ms TTI, and physical configuration 2 case.

18.2.2.32.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>3x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>10x144</u>	<u>N/A</u>

Uplink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>512 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 time slot + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>2784 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> (384 kbps, 20ms)	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A
	<u>TF5, bits</u>	12x336	N/A
	<u>TF6, bits</u>	16x336	N/A
	<u>TF7, bits</u>	20x336	N/A
	<u>TF8, bits</u>	24x336	N/A

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF7, TF0)</u>
<u>DL_TFC8</u>	<u>(TF8, TF0)</u>
<u>DL_TFC9</u>	<u>(TF0, TF1)</u>
<u>DL_TFC10</u>	<u>(TF1, TF1)</u>
<u>DL_TFC11</u>	<u>(TF2, TF1)</u>
<u>DL_TFC12</u>	<u>(TF3, TF1)</u>
<u>DL_TFC13</u>	<u>(TF4, TF1)</u>
<u>DL_TFC14</u>	<u>(TF5, TF1)</u>
<u>DL_TFC15</u>	<u>(TF6, TF1)</u>
<u>DL_TFC16</u>	<u>(TF7, TF1)</u>
<u>DL_TFC17</u>	<u>(TF8, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>		<u>Physical Configuration 2</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF16 x 6 codes x 4 time slots + SF16 x 4 codes x 1 time slot (alt. SF1 x 1 code x 3 time slots)</u>
	<u>Max. Number of data bits/radio frame</u>	<u>7712 bits (alt. 13232 bits)</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>Puncturing Limit</u>	<u>0.60 (alt. 1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 376	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 760	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1784	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, 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_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_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_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_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.32.2.4 Test requirements

See 18.2.1.1 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 (1x144).
 - for sub-test 2: RB5/TF2 (3x144).
 - for sub-test 3: RB5/TF3 (7x144).
 - for sub-test 4 to 8: RB5/TF4 (10x144).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 128 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 512 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 4 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.33 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

18.2.2.33.1 Interactive or background / UL:128 DL:384 kbps / PS RAB / Payload 320, 10 ms TTI Down Link, Physical Configuration 1

18.2.2.33.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.33.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.33 for the uplink payload 320, the downlink 10 ms TTI, and physical configuration 1 case.

18.2.2.33.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	0x336	0x148
	<u>TF1, bits</u>	1x336	1x148
	<u>TF2, bits</u>	2x336	N/A
	<u>TF3, bits</u>	4x336	N/A
	<u>TF4, bits</u>	8x336	N/A

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>		<u>Physical Configuration 1</u>
	<u>Midamble</u>	<u>256 chips</u>

	<u>Codes and time slots</u>	<u>SF2 x 1 code x 1 timeslot</u>
	<u>Max. Number of data bits/radio frame</u>	<u>2064 bits</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>TPC</u>	<u>2 bits</u>
	<u>Puncturing Limit</u>	<u>0.44 (alt. 0.40)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5 (384 kbps, 10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x336</u>	<u>N/A</u>

Downlink TFCs:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF0, TF1)</u>
<u>DL_TFC7</u>	<u>(TF1, TF1)</u>
<u>DL_TFC8</u>	<u>(TF2, TF1)</u>
<u>DL_TFC9</u>	<u>(TF3, TF1)</u>
<u>DL_TFC10</u>	<u>(TF4, TF1)</u>
<u>DL_TFC11</u>	<u>(TF5, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>		<u>Physical Configuration 1</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF16 x 8 codes x 3 time slots</u>
	<u>Max. Number of data bits/radio frame</u>	<u>6608 bits</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>Puncturing Limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
2	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
3	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
4	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
5	<u>DL_TFC5</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 3832</u>	<u>RB5: 3832</u>
<p>NOTE: <u>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 chosen 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.</u></p>						

See 18.2.1.1 for test procedure.

18.2.2.33.1.4 Test requirements

See 18.2.1.1 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 and 5: RB5/TF4 (8x336).
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.

18.2.2.33.2 Interactive or background / UL:128 DL:384 kbps / PS RAB / Payload 128, 20 ms TTI Down Link, Physical Configuration 2

18.2.2.33.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.33.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.33 for the uplink payload 128, the downlink 20 ms TTI, and physical configuration 2 case.

18.2.2.33.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (128 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>14x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>20x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>	<u>Physical Configuration 2</u>
<u>Midamble</u>	<u>256 chips</u>
<u>Codes and time slots</u>	<u>SF2 x 1 code x 2 timeslots + SF4 x 1 code x 1 time slot</u>
<u>Max. Number of data bits/radio frame</u>	<u>5376 bits</u>
<u>TFCI code word</u>	<u>16 bits</u>
<u>TPC</u>	<u>2 bits</u>
<u>Puncturing Limit</u>	<u>1</u>

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)

Physical channel parameters

DPCH Downlink		Physical Configuration 2
	Midamble	256 chips
	Codes and time slots	SF16 x 6 codes x 4 time slots + SF16 x 4 codes x 1 time slot (alt. SF1 x 1 code x 3 time slots)
	Max. Number of data bits/radio frame	7712 bits (alt. 13232 bits)
	TFCI code word	16 bits
	Puncturing Limit	0.60 (alt. 1)

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 376	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 888	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1784	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, 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_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, 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_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 6392
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
<p>NOTE: 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 chosen 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.</p>						

[See 18.2.1.1 for test procedure.](#)

[18.2.2.33.2.4 Test requirements](#)

[See 18.2.1.1 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 \(1x144\).](#)
- [for sub-test 2: RB5/TF2 \(7x144\).](#)
- [for sub-test 3: RB5/TF3 \(14x144\).](#)
- [for sub-test 4 to 8: RB5/TF4 \(20x144\).](#)

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 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 RB5 having the same content as 1 times plus 256 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 512 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 4, 6, and 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.
- for sub-test 5: an RLC SDU on RB5 having the same content as 1 times plus 1280 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 7: an RLC SDU on RB5 having the same content as 1 times plus 1280 lsb's of the DL RLC SDU sent by the SS.

18.2.2.34 Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.34.1 Interactive or background / UL:384 DL:384 kbps / PS RAB / 10 ms TTI, Physical Configuration 1

18.2.2.34.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.34.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.34 for the 10 ms TTI, physical configuration 1 case.

18.2.2.34.1.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (384 kbps, 10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x336</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x336</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x336</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x336</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x336</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x336</u>	<u>N/A</u>

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)

Physical channel parameters

DPCCH Uplink		Physical Configuration 1
	Midamble	256 chips
	Codes and time slots	SF2 x 1 code x 3 time slots
	Max. Number of data bits/radio frame	6480 bits
	TFCI code word	16 bits
	TPC	2 bits
	Puncturing Limit	0.48

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)

Physical channel parameters

<u>DPCH Downlink</u>		<u>Physical Configuration 1</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF16 x 8 codes x 3 time slots</u>
	<u>Max. Number of data bits/radio frame</u>	<u>6608 bits</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>Puncturing Limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u> (note 1)	<u>UL RLC SDU size (bits)</u> (note 2)	<u>Test data size (bits)</u> (note 2)
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC7, UL_TFC6</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC6, UL_TFC10</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
<u>5</u>	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11</u>	<u>RB5: 3832</u>	<u>RB5: 3832</u>
<u>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC6 are part of minimum set of TFCs.</u>						
<u>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</u>						

See 18.2.1.1 for test procedure.

18.2.2.34.1.4 Test requirements

See 18.2.1.1 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.](#)

[18.2.2.34.2 Interactive or background / UL:384 DL:384 kbps / PS RAB / 20 ms TTI, Physical Configuration 2](#)

[18.2.2.34.2.1 Conformance requirement](#)

[See 18.2.2.4.1.](#)

[18.2.2.34.2.2 Test purpose](#)

[Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.34. for the 20 ms TTI, physical configuration 2 case](#)

[18.2.2.34.2.3 Method of test](#)

[Uplink 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

[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	(TF6, TF0)
UL_TFC7	(TF7, TF0)
UL_TFC8	(TF8, TF0)
UL_TFC9	(TF0, TF1)
UL_TFC10	(TF1, TF1)
UL_TFC11	(TF2, TF1)
UL_TFC12	(TF3, TF1)
UL_TFC13	(TF4, TF1)
UL_TFC14	(TF5, TF1)
UL_TFC15	(TF6, TF1)
UL_TFC16	(TF7, TF1)
UL_TFC17	(TF8, TF1)

Physical channel parameters

DPCH Uplink	Physical Configuration 2
Midamble	256 chips
Codes and time slots	SF2 x 1 code x 5 timeslots + SF4 x 1 code x 2 timeslots (alt. {SF2 x 1 code + SF4 x 1 code} x 4 timeslots)
Max. Number of data bits/radio frame	13104 bits
TFCI code word	16 bits
TPC	2 bits
Puncturing Limit	1

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:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF7, TF0)</u>
<u>DL_TFC8</u>	<u>(TF8, TF0)</u>
<u>DL_TFC9</u>	<u>(TF0, TF1)</u>
<u>DL_TFC10</u>	<u>(TF1, TF1)</u>
<u>DL_TFC11</u>	<u>(TF2, TF1)</u>
<u>DL_TFC12</u>	<u>(TF3, TF1)</u>
<u>DL_TFC13</u>	<u>(TF4, TF1)</u>
<u>DL_TFC14</u>	<u>(TF5, TF1)</u>
<u>DL_TFC15</u>	<u>(TF6, TF1)</u>
<u>DL_TFC16</u>	<u>(TF7, TF1)</u>
<u>DL_TFC17</u>	<u>(TF8, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>		<u>Physical Configuration 2</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF16 x 6 codes x 4 time slots + SF16 x 4 codes x 1 time slot (alt. SF1 x 1 code x 3 time slots)</u>
	<u>Max. Number of data bits/radio frame</u>	<u>7712 bits (alt. 13232 bits)</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>Puncturing Limit</u>	<u>0.60 (alt. 1)</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits) (note)</u>	<u>Test data size (bits) (note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC1, UL_TFC9, UL_TFC10</u>	<u>RB5: 312</u>	<u>RB5: 312</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC2, UL_TFC9, UL_TFC11</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC3, UL_TFC9, UL_TFC12</u>	<u>RB5: 1272</u>	<u>RB5: 1272</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC4, UL_TFC9, UL_TFC13</u>	<u>RB5: 2552</u>	<u>RB5: 2552</u>
<u>5</u>	<u>DL_TFC5</u>	<u>UL_TFC5</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC5, UL_TFC9, UL_TFC14</u>	<u>RB5: 3832</u>	<u>RB5: 3832</u>
<u>6</u>	<u>DL_TFC6</u>	<u>UL_TFC6</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC6, UL_TFC9, UL_TFC15</u>	<u>RB5: 5112</u>	<u>RB5: 5112</u>
<u>7</u>	<u>DL_TFC7</u>	<u>UL_TFC7</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC7, UL_TFC9, UL_TFC16</u>	<u>RB5: 6392</u>	<u>RB5: 6392</u>
<u>8</u>	<u>DL_TFC8</u>	<u>UL_TFC8</u>	<u>DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9</u>	<u>UL_TFC0, UL_TFC8, UL_TFC9, UL_TFC17</u>	<u>RB5: 7672</u>	<u>RB5: 7672</u>

NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

See 18.2.1.1 for test procedure.

18.2.2.34.2.4 Test requirements

See 18.2.1.1 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/TF5 (12x336).
 - for sub-test 6: RB5/TF6 (16x336).

- for sub-test 7: RB5/TF7 (20x336).

- for sub-test 8: RB5/TF8 (24x336).

3. At step 15 the UE shall return

- for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

18.2.2.35 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

18.2.2.35.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / Payload 320, 10 ms TTI Down Link, Physical Configuration 1

18.2.2.35.1.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.35.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.35 for the uplink payload 320, the downlink 10 ms TTI, and physical configuration 1 case.

18.2.2.35.1.3 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:

	<u>TFI</u>	<u>RB5</u> <u>(2048 kbps,</u> <u>10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x656</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x656</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x656</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x656</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x656</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x656</u>	<u>N/A</u>
	<u>TF6, bits</u>	<u>16x656</u>	<u>N/A</u>
	<u>TF7, bits</u>	<u>20x656</u>	<u>N/A</u>
	<u>TF8, bits</u>	<u>24x656</u>	<u>N/A</u>
	<u>TF9, bits</u>	<u>28x656</u>	<u>N/A</u>
	<u>TF10, bits</u>	<u>31x656</u>	<u>N/A</u>

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF7, TF0)</u>
<u>DL_TFC8</u>	<u>(TF8, TF0)</u>
<u>DL_TFC9</u>	<u>(TF9, TF0)</u>
<u>DL_TFC10</u>	<u>(TF10, TF0)</u>
<u>DL_TFC11</u>	<u>(TF0, TF1)</u>
<u>DL_TFC12</u>	<u>(TF1, TF1)</u>
<u>DL_TFC13</u>	<u>(TF2, TF1)</u>
<u>DL_TFC14</u>	<u>(TF3, TF1)</u>
<u>DL_TFC15</u>	<u>(TF4, TF1)</u>
<u>DL_TFC16</u>	<u>(TF5, TF1)</u>
<u>DL_TFC17</u>	<u>(TF6, TF1)</u>
<u>DL_TFC18</u>	<u>(TF7, TF1)</u>
<u>DL_TFC19</u>	<u>(TF8, TF1)</u>
<u>DL_TFC20</u>	<u>(TF9, TF1)</u>
<u>DL_TFC21</u>	<u>(TF10, TF1)</u>

Physical channel parameters

<u>DPCH Uplink</u>		<u>Physical Configuration 1</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF2 x 1 code x 3 time slots</u>
	<u>Max. Number of data bits/radio frame</u>	<u>6480 bits</u>
	<u>TFCI code word</u>	<u>16 bits</u>
	<u>TPC</u>	<u>2 bits</u>
	<u>Puncturing Limit</u>	<u>0.48</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under Test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits)</u> (note)	<u>Test data size (bits)</u> (note)
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 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 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 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 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 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 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 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 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 TFC4, UL TFC5, UL TFC9	RB5: 20472	RB5: 20472

NOTE: 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 chosen 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.

See 18.2.1.1 for test procedure.

18.2.2.35.1.4 Test requirements

See 18.2.1.1 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-test 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 same content as 1 times plus 320 lsb's of the DL RLC SDU sent by the SS.

18.2.2.35.2 Interactive or background / UL:64 DL:2048 kbps / PS RAB / Payload 128, 20 ms TTI Down Link, Physical Configuration 2

18.2.2.35.2.1 Conformance requirement

See 18.2.2.4.1.

18.2.2.35.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.3.4.1.35 for the uplink payload 128, the downlink 20 ms TTI, and physical configuration 2 case.

18.2.2.35.2.3 Method of test

Uplink TFS:

	<u>TFI</u>	<u>RB5 (64 kbps)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x144</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x144</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>3x144</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>7x144</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>10x144</u>	<u>N/A</u>

Uplink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>UL_TFC0</u>	<u>(TF0, TF0)</u>
<u>UL_TFC1</u>	<u>(TF1, TF0)</u>
<u>UL_TFC2</u>	<u>(TF2, TF0)</u>
<u>UL_TFC3</u>	<u>(TF3, TF0)</u>
<u>UL_TFC4</u>	<u>(TF4, TF0)</u>
<u>UL_TFC5</u>	<u>(TF0, TF1)</u>
<u>UL_TFC6</u>	<u>(TF1, TF1)</u>
<u>UL_TFC7</u>	<u>(TF2, TF1)</u>
<u>UL_TFC8</u>	<u>(TF3, TF1)</u>
<u>UL_TFC9</u>	<u>(TF4, TF1)</u>

Downlink TFS:

	<u>TFI</u>	<u>RB5</u> <u>(2048 kbps,</u> <u>10ms)</u>	<u>DCCH</u>
<u>TFS</u>	<u>TF0, bits</u>	<u>0x656</u>	<u>0x148</u>
	<u>TF1, bits</u>	<u>1x656</u>	<u>1x148</u>
	<u>TF2, bits</u>	<u>2x656</u>	<u>N/A</u>
	<u>TF3, bits</u>	<u>4x656</u>	<u>N/A</u>
	<u>TF4, bits</u>	<u>8x656</u>	<u>N/A</u>
	<u>TF5, bits</u>	<u>12x656</u>	<u>N/A</u>
	<u>TF6, bits</u>	<u>16x656</u>	<u>N/A</u>
	<u>TF7, bits</u>	<u>20x656</u>	<u>N/A</u>
	<u>TF8, bits</u>	<u>24x656</u>	<u>N/A</u>
	<u>TF9, bits</u>	<u>28x656</u>	<u>N/A</u>
	<u>TF10, bits</u>	<u>32x656</u>	<u>N/A</u>
	<u>TF11, bits</u>	<u>36x656</u>	<u>N/A</u>
	<u>TF12, bits</u>	<u>40x656</u>	<u>N/A</u>
	<u>TF13, bits</u>	<u>44x656</u>	<u>N/A</u>
	<u>TF14, bits</u>	<u>48x656</u>	<u>N/A</u>
	<u>TF15, bits</u>	<u>52x656</u>	<u>N/A</u>
	<u>TF16, bits</u>	<u>56x656</u>	<u>N/A</u>
	<u>TF17, bits</u>	<u>60x656</u>	<u>N/A</u>
<u>TF18, bits</u>	<u>64x656</u>	<u>N/A</u>	

Downlink TFCS:

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC0</u>	<u>(TF0, TF0)</u>
<u>DL_TFC1</u>	<u>(TF1, TF0)</u>
<u>DL_TFC2</u>	<u>(TF2, TF0)</u>
<u>DL_TFC3</u>	<u>(TF3, TF0)</u>
<u>DL_TFC4</u>	<u>(TF4, TF0)</u>
<u>DL_TFC5</u>	<u>(TF5, TF0)</u>
<u>DL_TFC6</u>	<u>(TF6, TF0)</u>
<u>DL_TFC7</u>	<u>(TF7, TF0)</u>
<u>DL_TFC8</u>	<u>(TF8, TF0)</u>
<u>DL_TFC9</u>	<u>(TF9, TF0)</u>
<u>DL_TFC10</u>	<u>(TF10, TF0)</u>
<u>DL_TFC11</u>	<u>(TF11, TF0)</u>
<u>DL_TFC12</u>	<u>(TF12, TF0)</u>
<u>DL_TFC13</u>	<u>(TF13, TF0)</u>
<u>DL_TFC14</u>	<u>(TF14, TF0)</u>
<u>DL_TFC15</u>	<u>(TF15, TF0)</u>
<u>DL_TFC16</u>	<u>(TF16, TF0)</u>
<u>DL_TFC17</u>	<u>(TF17, TF0)</u>
<u>DL_TFC18</u>	<u>(TF18, TF0)</u>
<u>DL_TFC19</u>	<u>(TF0, TF1)</u>
<u>DL_TFC20</u>	<u>(TF1, TF1)</u>
<u>DL_TFC21</u>	<u>(TF2, TF1)</u>
<u>DL_TFC22</u>	<u>(TF3, TF1)</u>
<u>DL_TFC23</u>	<u>(TF4, TF1)</u>
<u>DL_TFC24</u>	<u>(TF5, TF1)</u>
<u>DL_TFC25</u>	<u>(TF6, TF1)</u>
<u>DL_TFC26</u>	<u>(TF7, TF1)</u>
<u>DL_TFC27</u>	<u>(TF8, TF1)</u>
<u>DL_TFC28</u>	<u>(TF9, TF1)</u>

<u>TFCI</u>	<u>(RB5, DCCH)</u>
<u>DL_TFC29</u>	<u>(TF10, TF1)</u>
<u>DL_TFC30</u>	<u>(TF11, TF1)</u>
<u>DL_TFC31</u>	<u>(TF12, TF1)</u>
<u>DL_TFC32</u>	<u>(TF13, TF1)</u>
<u>DL_TFC33</u>	<u>(TF14, TF1)</u>
<u>DL_TFC34</u>	<u>(TF15, TF1)</u>
<u>DL_TFC35</u>	<u>(TF16, TF1)</u>
<u>DL_TFC36</u>	<u>(TF17, TF1)</u>
<u>DL_TFC37</u>	<u>(TF18, TF1)</u>

Physical channel parameters

<u>DPCH Downlink</u>		<u>Physical Configuration 2</u>
	<u>Midamble</u>	<u>256 chips</u>
	<u>Codes and time slots</u>	<u>SF16 x 13 codes x 4 time slots + SF16 x 12 codes x 7 time slot</u>
	<u>Max. Number of data bits/radio frame</u>	<u>37520 bits (alt. 37504)</u>
	<u>TFCI code word</u>	<u>16 bits (alt. 32 bits)</u>
	<u>Puncturing limit</u>	<u>0.56</u>

Sub-tests:

<u>Sub-test</u>	<u>Downlink TFCs Under Test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCIs</u>	<u>UL RLC SDU size (bits)</u> <u>(note)</u>	<u>Test data size (bits)</u> <u>(note)</u>
<u>1</u>	<u>DL_TFC1</u>	<u>UL_TFC1</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6</u>	<u>RB5: 632</u>	<u>RB5: 632</u>
<u>2</u>	<u>DL_TFC2</u>	<u>UL_TFC2</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7</u>	<u>RB5: 1536</u>	<u>RB5: 1272</u>
<u>3</u>	<u>DL_TFC3</u>	<u>UL_TFC3</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8</u>	<u>RB5: 2688</u>	<u>RB5: 2552</u>
<u>4</u>	<u>DL_TFC4</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 5112</u>	<u>RB5: 5112</u>
<u>5</u>	<u>DL_TFC5</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 7672</u>	<u>RB5: 7672</u>
<u>6</u>	<u>DL_TFC6</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 10232</u>	<u>RB5: 10232</u>
<u>7</u>	<u>DL_TFC7</u>	<u>UL_TFC4</u>	<u>DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5</u>	<u>UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9</u>	<u>RB5: 12792</u>	<u>RB5: 12792</u>

<u>Sub-test</u>	<u>Downlink TFCs Under Test</u>	<u>Uplink TFCs Under test</u>	<u>Implicitly tested</u>	<u>Restricted UL TFCs</u>	<u>UL RLC SDU size (bits)</u> (note)	<u>Test data size (bits)</u> (note)
8	DL TFC8	UL TFC4	DL TFC0, DL TFC19, UL TFC0, UL TFC5	UL TFC0, 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 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 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 TFC4, UL TFC5, UL TFC9	RB5: 23032	RB5: 23032
12	DL TFC12	UL TFC4	DL TFC0, DL TFC19, UL TFC0, UL TFC5	UL TFC0, 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 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 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 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 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 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 TFC4, UL TFC5, UL TFC9	RB5: 40952	RB5: 40952
<p>NOTE: 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 chosen 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.</p>						

See 18.2.1.1 for test procedure.

18.2.2.35.2.4 Test requirements

See 18.2.1.1 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 (1x144).
- for sub-test 2: RB5/TF2 (3x144).
- for sub-test 3: RB5/TF3 (7x144).
- for sub-test 4 to 18: RB5/TF4 (10x144).

3. At step 15 the UE shall return

- for sub-test 1, 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 2: an RLC SDU on RB5 having the same content as 1 times plus 264 lsb's of the DL RLC SDU sent by the SS.
- for sub-test 3: an RLC SDU on RB5 having the same content as 1 times plus 136 lsb's of the DL RLC SDU sent by the SS.

18.2.2.36 Void

18.2.2.37 Void

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 811 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 specific message contents of test case 8.1.2.9 to support CS Domain.		
Source:	⌘ Anite		
Work item code:	⌘ TEI	Date:	⌘ 28/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 contents defined for RRC Connection Request do not include "Originating Conversational Call" in the list of possible establishment causes. When the operator originates a call in CS domain, the RRC Connection Request is transmitted with "Originating Conversational Call".
Summary of change:	⌘ "Originating Conversational Call" is added to the list of allowed establishment causes for RRC CONNECTION REQUEST in step 2 & Step 3c for all K values.
Consequences if not approved:	⌘ TTCN implementation of this testcase, will fail a conformant UE in CS domain.

Clauses affected:	⌘ 8.1.2.9						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N				
Y	N						
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.

8.1.2.9 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

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. Also the modification time is set to 2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. See specific message contents.
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.
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

SYSTEM INFORMATION TYPE 1 (Step 1a)

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.

CHANGE REQUEST

⌘ **34.123-1 CR 810** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 Conformance Requirement for P3 CC NAS TCs regarding support for "Prolonged Clearing Procedure".		
Source:	⌘ Anite		
Work item code:	⌘ TEI	Date:	⌘ 29/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Clause 10.1.2.4.6 The Conformance Requirement referenced in this clause currently only applies to UEs that do not support the "Prolonged Clearing Procedure". It specifies, "10.1.2.4.6.2 Conformance requirement References TS 24.008 clause 5.4.4.1.2.1" But TS 24.008 clause 5.4.4.1.2.1 is only applicable to UEs that do not support the "Prolonged Clearing Procedure" option. (as mentioned in 24.008 Section 5.4.4.1). TS 24.008 Section 5.4.4.2.3.1, specifies the requirement which is applicable to UEs which support the "Prolonged Clearing Procedure" option. Clause 10.1.3.3.4 The same issue applies to TC 10.1.3.3.4 The above two test cases relate to the situation when in-band tones are not available. Clause 10.1.2.6.3 The same issue applies to TC 10.1.2.6.3 , but in this test case the Conformance Requirement relates to the situation when in-band tones are available.
---------------------------	---

Summary of change: ⌘	The Conformance Requirement is made applicable to UEs which both support and do not support the "Prolonged Clearing Procedure". 1. Section 10.1.2.4.6.2 Conformance requirement references changed to TS 24.008 clause 5.4.4.1.2.1 and 5.4.4.2.3.1 2. Section 10.1.3.3.4.2 Conformance requirement references changed to TS 24.008 clause 5.4.4.1.2.1 and 5.4.4.2.3.1 3. Section 10.1.2.6.3.2 Conformance requirement references changed to TS 24.008 clause 5.4.4.1.1.1 and 5.4.4.2.1.1
Consequences if not approved: ⌘	TCs will not be applicable to UEs supporting the "Prolonged Clearing Procedure".

Clauses affected: ⌘	10.1.2.4.6, 10.1.2.6.3, 10.1.3.3.4									
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications O&M Specifications
	Y	N								
	<input type="checkbox"/>	<input checked="" type="checkbox"/>								
<input checked="" type="checkbox"/>	<input type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
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 >>

10.1.2.4.6 Outgoing call / U3 Mobile originating call proceeding / DISCONNECT without in band tones

10.1.2.4.6.1 Definition

The call control entity of the UE being in the state, U3, a DISCONNECT message is received by the UE. The DISCONNECT message does not contain indication of in-band information availability.

10.1.2.4.6.2 Conformance requirement

The call control entity of the UE in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon the receipt of a DISCONNECT message without progress indicator information element or with progress indicator different from #8:

- stop all running call control timers;
- send a RELEASE message;
- start timer T308; and
- enter the "release request" state.

...

The call control entity of the mobile station in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon the receipt of a DISCONNECT message either without progress indicator information element or with progress indicator different from #8, and, either without the *Allowed Actions* IE or with the *Allowed Actions* IE indicating that "CCBS is not possible":

- stop all running call control timers;
- send a RELEASE message;
- start timer T308; and
- enter the "release request" state.

References

TS 24.008 clause 5.4.4.1.2.1 [and](#) 5.4.4.2.3.1

10.1.2.4.6.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a DISCONNECT without progress indicator returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.2.4.6.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a DISCONNECT message not containing indication of in-band information availability to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		DISCONNECT	without progress indicator
2	->		RELEASE	
3	<-		STATUS ENQUIRY	cause #30, state U19
4	->		STATUS	

Specific message contents:

None.

10.1.2.4.6.5 Test requirements

After step 1 the UE shall send a RELEASE message and enter the CC-state U19, "Release Request"

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

10.1.2.6.3 U10 active / DISCONNECT with in band tones

10.1.2.6.3.1 Definition

The call control entity of the UE being in the state, U10, a DISCONNECT message indicating availability of in band information is received by the UE.

10.1.2.6.3.2 Conformance requirement

The call control entity of the UE in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon receipt of a DISCONNECT message with progress indicator #8:

- i) if an appropriate speech traffic channel is not connected, continue clearing as defined in TS 24.008 clause 5.4.4.1.2.1 without connecting to the in-band tone/announcement;
- ii) if an appropriate speech traffic channel is connected, attach the user connection for speech if it is not yet attached and enter the "disconnect indication" state. In that state, if upper layers request the clearing of the call, the call control entity of the UE shall proceed as defined in TS 24.008 clause 5.4.4.1.2.1.

...

The call control entity of the MS in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon receipt of a DISCONNECT message with progress indicator #8 and, either not containing an Allowed Actions IE or containing an Allowed Actions IE indicating "CCBS activation is not possible":

i) if an appropriate speech traffic channel is not connected,

- stop all running call control timers;
- send a RELEASE message;
- start timer T308; and
- enter the "release request" state.
- not connect to the in-band tone/announcement;

ii) if an appropriate speech traffic channel is connected, attach the user connection for speech if it is not yet attached and enter the "disconnect indication" state. In that state, if upper layers request the clearing of the call, the call control entity of the MS shall:

- stop all running call control timers;
- send a RELEASE message;
- start timer T308; and
- enter the "release request" state.

References

TS 24.008 clause 5.4.4.1.1.1 and clause 5.4.4.2.1.1

10.1.2.6.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U10, "Active", upon receipt of a DISCONNECT message with a Progress Indicator indicating in-band information, through-connects the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE sends a RELEASE message.

10.1.2.6.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U10. The SS sends a DISCONNECT message containing indication of in-band information availability to the UE. The SS checks that if channel mode is speech, the DTCH shall be through connected and the UE enters state U12, disconnect indication. If channel mode is not speech, the DTCH shall not be through connected and the UE enters state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		DISCONNECT	(note)
A2	SS			DTCH in speech mode: the SS will check that the audio path for in band tones is attached.
A3	<-		STATUS ENQUIRY	
A4	->		STATUS	cause #30, state U12
B2	->		RELEASE	DTCH is not in speech mode:
B3	<-		STATUS ENQUIRY	
B4	->		STATUS	cause #30, state U19

Specific message contents:

NOTE: the Progress Indicator, Progress Description value:

#8 in band information or appropriate pattern now available.

10.1.2.6.3.5 Test requirements

After step 1 the UE shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

10.1.3.3.4 Incoming call / U9 mobile terminating call confirmed / DISCONNECT received

10.1.3.3.4.1 Definition

The call control entity of the UE being in the state, U9, a DISCONNECT message is received by the UE.

10.1.3.3.4.2 Conformance requirement

The call control entity of the UE in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon the receipt of a DISCONNECT message without progress indicator information element or with progress indicator different from #8:

- stop all running call control timers;
- send a RELEASE message;
- start timer T308; and
- enter the "release request" state.

...

The call control entity of the mobile station in any state except the "null" state, the "disconnect indication" state, and the "release request" state, shall, upon the receipt of a DISCONNECT message either without progress indicator information element or with progress indicator different from #8, and, either without the *Allowed Actions IE* or with the *Allowed Actions IE* indicating that "CCBS is not possible":

- stop all running call control timers;
- send a RELEASE message;

- [start timer T308; and](#)
- [enter the "release request" state.](#)

References

TS 24.008 clause 5.4.4.1.2.1 [and 5.4.4.2.3.1](#)

10.1.3.3.4.3 Test purpose

To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon receipt of a DISCONNECT returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.3.3.4.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;
- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9. The SS sends a DISCONNECT message to the UE. The UE responds by sending a RELEASE message and enters state U19, release request. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		DISCONNECT	
2	->		RELEASE	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30, state U19

Specific message contents:

None.

10.1.3.3.4.5 Test requirements

After step 1 the UE shall return a RELEASE message and enter the CC-state U19, "Release Request".

<< END OF MODIFIED SECTION >>

CR-Form-v7

CHANGE REQUEST

34.123-1 CR 812 # rev - # Current version: **5.7.1**

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 RRC Package 2 TC 8.4.1.17 on Measurement Reporting Interval.		
Source:	# Anite		
Work item code:	# TEI	Date:	# 29/04/04
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# 1. TS 25.331 section 8.6.7.8 specifies For the first MEASUREMENT REPORT message, the UE shall: 1> 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; 1. The TTCN defined in TS 34.123-3 tests this requirement but this is not specified in the prose TS 34.123-1. The test for reporting interval is not included in 8.4.1.17 at step 8 when UE sends the first MEASUREMENT REPORT message after the MEASUREMENT CONTROL message at Step 7.
Summary of change:	# 2. Section 8.4.1.17.4 is updated accordingly to consider reporting interval at step 8 when the UE sends first MEASUREMENT REPORT message after the MEASUREMENT CONTROL message at Step 7.
Consequences if not approved:	# TS 34.123-1 would not match the TS 34.123-3 TTCN test case. (If the TTCN were modified it may PASS a non-complaint UE.)

Clauses affected:	# 8.4.1.17				
Other specs affected:	#				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>					
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>					

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.

8.4.1.16.5 Test Requirement

After step 5 the UE shall send MEASUREMENT REPORT messages on the uplink DCCH containing RLC buffer payload information for all SRBs. After 6 seconds UE shall send second MEASUREMENT REPORT messages containing RLC buffer payload information for all SRBs and RAB.

After step 8 the UE shall overwrite measurement information received from system information type 11 with measurement information in MEASUREMENT CONTROL message. The UE shall not send MEASUREMENT REPORT message within time to trigger interval. After step 9 the UE shall transmit MEASUREMENT REPORT messages with event identity 4B.

8.4.1.17 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL_DCH state

8.4.1.17.1 Definition

8.4.1.17.2 Conformance requirement

Upon transition from idle mode to CELL_DCH state, the UE shall:

- 1> begin a traffic volume type measurement, assigned in System Information Block type 11 (or System Information Block type 12).

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.

Reference

3GPP TS 25.331 clause 8.4.1.8.4, 3GPP TS 25.331 clause 8.4.1.3.

8.4.1.17.3 Test Purpose

1. To confirm that after a state transition from idle mode to CELL_DCH state, the UE begins a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH. When entering CELL_DCH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied.
2. During CELL_DCH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

8.4.1.17.4 Method of test

Initial Condition

System Simulator: 1cell

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

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "Average RLC Buffer Payload", report criteria = "Event triggered, event 4B", reporting threshold = "8K", report transfer mode = "Unacknowledged mode". The System Information type 12 message is not broadcasted.

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).

UE shall begin traffic volume measurements after entering in CELL_DCH state. The UE shall send MEASUREMENT REPORT message because uplink traffic is below threshold.

SS sends MEASUREMENT CONTROL message to the UE. This message reconfigures measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Periodic reporting criteria", reporting interval = "8 seconds", reporting amount = "8". The UE shall periodically send MEASUREMENT REPORT message to report RLC Buffer Payload for each RB.

SS sends MEASUREMENT CONTROL message to release traffic volume measurement. UE shall not send measurement report after receiving this message. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

<< Start of Modified Section >>

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.	
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	→	MEASUREMENT REPORT	Event 4B is triggered on DCH 5. This message should come on RB1.
6a	→	MEASUREMENT REPORT	Event 4B is triggered on DCH 1. This message should come on RB1 (only for PS)
7	←	MEASUREMENT CONTROL	Periodic Traffic volume measurement reporting is requested.
8	→	MEASUREMENT REPORT	This message should come on RB2. This MEASUREMENT REPORT shall be received on or before 8 Seconds.
9	→	MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 8 Seconds.
10	←	MEASUREMENT CONTROL	Release traffic volume measurement.
11			Wait for 8 Seconds to confirm that UE does not send measurement report message.
12	↔	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 (Step 1) (FDD)

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	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	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Traffic volume reporting quantity	
- Time Interval to take an average	200 msec
- RB buffer payload	FALSE
- RB buffer payload average	TRUE
- RB buffer payload variance	FALSE
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Unacknowledged Mode
- Periodical or event trigger	Event Trigger
- Report criteria system Information	Traffic volume reporting criteria
- Event specific parameters	
- Event id	4B
- Reporting threshold	8K
- Time to trigger	Not Present
- Pending time after trigger	Not Present
- Tx interruption after trigger	Not Present

MEASUREMENT REPORT (Step 6/6a)

The order in which the RBs are reported is not checked.

Information Element	Value/remark
Measurement identity	Check to see if set to 2
Measured Results	Check to see if set to "traffic volume measured results list"
- CHOICE measurement	1
- Traffic volume measurement results	Check to see if this IE is absent
- RB identity	Check to see if this IE is present
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	2
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	Check to see if this IE is present
- 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	3
- RB identity	Check to see if this IE is absent
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is present
- 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 absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20 (for the PS case only)
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- 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	DCH
- UL transport channel type causing the event	5 (step 6), 1 (step 6a)
- UL Transport Channel identity	4B
- Traffic volume event identity	

MEASUREMENT CONTROL (Step 7)

Information Element	Value/remark
Measurement Identity	2
Measurement Command	Set up
Measurement reporting mode	Acknowledged mode
- Transfer Mode	Periodic
- Periodical or event trigger	Not Present
Additional measurement list	Traffic Volume Measurement
CHOICE measurement type	
- Traffic volume measurement object list	DCH
- Uplink transport channel type	5
- UL Target Transport Channel ID	
- Traffic volume measurement quantity	RLC Buffer Payload
- Measurement quantity	Not Present
- Time Interval to take an average or a variance	
- Traffic volume reporting quantity	True
- RLC Buffer Payload for each RB	False
- Average of RLC Buffer Payload for each RBe	False
- Variance of RLC Buffer Payload for each RB	Not Present
- Measurement validity	Periodical Reporting Criteria
- CHOICE Reporting criteria	8
- Amount of reporting	8 Sec
- Reporting interval	Not Present
DPCH compressed mode status	

MEASUREMENT REPORT (Step 8,9)

The order in which the RBs are reported is not checked.

Information Element	Value/remark
Measurement identity	2
Measured Results	Traffic volume measured results list
- CHOICE measurement	
- 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
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 10)

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

8.4.1.17.5 Test Requirement

After step 5, due to triggering of event 4B, the UE shall send MEASUREMENT REPORT message using unacknowledged mode of RLC. After step 7, UE shall send MEASUREMENT REPORT message using Acknowledged mode of RLC. After 8 seconds UE shall send second MEASUREMENT REPORT message. After step 10, the UE shall not send MEASUREMENT REPORT message.

<< End of Modified Section >>

CHANGE REQUEST

⌘ **34.123-1 CR 813** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 8.3.4.2 test case at Step 6 for Measurement Report Message		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 28/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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: ⌘	<p>As per 3GPP TS 34.108 default content for SIB 11:</p> <p style="padding-left: 20px;">“ - Reporting quantities for active set cells</p> <p style="padding-left: 20px;">- Cell synchronisation information reporting indicator FALSE “</p> <p>As per 3GPP TS 25.331: 8.6.7.7 Cell Reporting Quantities "If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:</p> <p>1> include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":</p> <p style="padding-left: 40px;">2> if the measurement is performed on another frequency; or</p> <p style="padding-left: 40px;">2> if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:</p> <p style="padding-left: 80px;">3> the UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".</p> <p style="padding-left: 20px;">.....”</p> <p>At Step 3, Cell 2 is added to Active Set List by the ACTIVE SET UPDATE Message.</p> <p>Thus as per the above references, UE in Measurement Report at Step 6 will not send the Cell Synchronisation information for cell 2.</p>
-----------------------------	--

Summary of change: ⌘	At Step 6 Measurement Report for Cell No : 2 Cell synchronisation information value is changed to "Checked that this IE is absent".
Consequences if not approved: ⌘	Test case may Fail a Conformant UE.

Clauses affected: ⌘	8.3.4.2.4									
Other specs affected:	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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	<table border="1"> <tr> <td>Other core specifications</td> <td>⌘</td> <td></td> </tr> <tr> <td>Test specifications</td> <td></td> <td>34.123-1</td> </tr> <tr> <td>O&M Specifications</td> <td></td> <td></td> </tr> </table>	Other core specifications	⌘		Test specifications		34.123-1	O&M Specifications		
Other core specifications	⌘									
Test specifications		34.123-1								
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.
- 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.

8.3.4.2.4 Method of test

Initial Condition

System Simulator: 2 cells - both Cell 1 and Cell 2 are active

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 8.3.4.2

Parameter	Unit	Cell 1				Cell 2			
		T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Ch. 1				Ch. 1			
CPICH Ec	dBm/3.84MHz	-60	-60	-75	-60	-75	-60	-60	OFF

Table 8.3.4.2 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

At the start of the test, the UE goes to connected mode and establishes a radio access bearer service in the CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.2. UE shall be triggered to transmit 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 an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID).

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 8.3.4.2. UE shall 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 remove the radio link from cell 1 and then SS transmits an ACTIVE SET UPDATE message, which includes IE "Radio Link Removal Information" and specifying the P-CPICH information of the cell to be removed.

When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 2. 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 "T3" in table 8.3.4.2 so as to generate a radio link failure condition. The UE shall detect the radio link failure UE shall re-select to cell 1 and transmit a CELL UPDATE message. SS transmits a CELL UPDATE CONFIRM message after it receive CELL UPDATE message from UE. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities..

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				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.2
2		→	MEASUREMENT REPORT	See specific message contents for this message
3		←	ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4		→	ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1.
5				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.2
6		→	MEASUREMENT REPORT	See specific message contents for this message
7		←	ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information".
8		→	ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.
9		←	UE CAPABILITY ENQUIRY	Use default message.
10		→	UE CAPABILITY INFORMATION	Use default message.
11		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
12				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.2
13		→	CELL UPDATE	UE sends this message in cell 1.
14		←	CELL UPDATE CONFIRM	See message content.
15		→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

The contents of SIB11 broadcasted in cell 1 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108:

The contents of SIB12 in cell 1, and SIB11 and SIB12 in cell 2 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
<p>Message Type</p> <p>Integrity check info</p> <ul style="list-style-type: none"> - Message authentication code <p>- RRC Message sequence number</p> <p>Measurement identity</p> <p>Measured Results</p> <ul style="list-style-type: none"> - Intra-frequency measured results - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss <p>Measured results on RACH</p> <p>Additional measured results</p> <p>Event results</p> <ul style="list-style-type: none"> - Intra-frequency measurement event results <ul style="list-style-type: none"> - Intra-frequency event identity - Cell measurement event results <ul style="list-style-type: none"> - Primary CPICH info - Primary scrambling code 	<p>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.</p> <p>This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.</p> <p>1</p> <p>Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important)</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present and includes IE COUNT-C-SFN frame difference</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is present</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>Checked that this IE is absent</p> <p>1a</p> <p>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</p>

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in Annex.A, with the following exceptions:

Information Element	Value/remark
Radio link addition information - Primary CPICH Info - Primary Scrambling Code - Downlink DPCH info for each RL - CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code Number - Scrambling code change - TPC Combination Index - SSDT Cell Identity - Close loop timing adjustment mode - TFCI Combining Indicator - SCCPCH information for FACH	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 FDD P-CPICH can be used. Calculated value from Cell synchronisation information Not Present This IE is repeated for all existing downlink DPCHs allocated to the UE 1 Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets" For each DPCH, assign the same code number in the current code given in cell 1. Not Present 0 Not Present Not Present Not Present Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Message Type Integrity check info <ul style="list-style-type: none"> - Message authentication code <ul style="list-style-type: none"> - RRC Message sequence number Measurement identity Measured Results <ul style="list-style-type: none"> - Intra-frequency measured results list <ul style="list-style-type: none"> - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - CHOICE mode <ul style="list-style-type: none"> - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss - Cell measured results <ul style="list-style-type: none"> - Cell Identity - Cell synchronisation information - CHOICE mode <ul style="list-style-type: none"> - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss Measured results on RACH Additional measured results Event results <ul style="list-style-type: none"> - CHOICE event result - Intra-frequency event identity - Cell measurement event results <ul style="list-style-type: none"> - CHOICE mode <ul style="list-style-type: none"> - Primary CPICH info - Primary scrambling 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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1 Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference FDD Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent FDD Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent Intra-frequency measurement event results 1b FDD Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 7)

The message to be used in this test is the same as the message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Radio link removal information	1 radio link to be removed
<ul style="list-style-type: none"> - Primary CPICH info - Primary scrambling code 	Set to the same P-CPICH scrambling code assigned for cell 1

CELL UPDATE (Step 13)

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
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 14)

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'

8.3.4.2.5 Test requirement

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 using AM RLC to acknowledge the completion of the active set additional procedure.

After step 5 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 7 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

After step 10 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 12 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

CHANGE REQUEST

34.123-1 CR 814 # rev **-** # Current version: **5.7.1**

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 for RRC Transaction Identifier in test cases 8.1.6.1 and 8.1.6.2		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 29/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: # In these test cases at Step 2 of the expected sequence DownLinkDirectTransfer message containing an unexpected critical message extension is sent.

As per 3GPP TS 25.331 section 9.3b Unexpected critical message extension:

"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 clause 8."

As per 3GPP 25.331 Section 8.1.9.4 Invalid DOWNLINK DIRECT TRANSFER message:

"If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to

TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the invalid DOWNLINK DIRECT TRANSFER message has not been received. "

Thus based on the above section reference, in RRC STATUS message sent by UE at Step 2, Transaction identifier should be set to 0 for 8.1.6.1 and 8.1.6.2.

Summary of change: ⌘ In Specific Message Contents at Step 2, for RRC transaction identifier value "Same value in the DOWNLINK DIRECT TRANSFER message in step 1" is changed to '0' in 8.1.6.1 and 8.1.6.2.

Consequences if not approved: ⌘ Test procedure is not consistent with the core specs. Test case may pass a non conformant UE.

Clauses affected: ⌘ 8.1.6.1.4 and 8.1.6.2.4

Other specs Affected:	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	Other core specifications Test specifications O&M Specifications	⌘ 34.123-1
Y	N											
	X											
X												
	X											

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.

8.1.6.1 Direct Transfer in CELL DCH state (invalid message reception and no signalling connection exists)

8.1.6.1.1 Definition

8.1.6.1.2 Conformance requirement

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED_SIGNALLING_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

...

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

...

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";

Reference

3GPP TS 25.331 clause 8.1.9.3a, 8.1.9.4, 9.3b.

8.1.6.1.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message with a non comprehended critical extension. To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which includes an invalid IE "CN domain identity".

8.1.6.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_DCH (state 6-9 or 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

The UE is in the CELL_DCH state. The SS transmits an invalid DOWNLINK DIRECT TRANSFER message to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message extension not comprehended" shall be indicated in IE "Protocol error cause". The SS transmits a DOWNLINK DIRECT TRANSFER message that contains an invalid IE "CN domain identity" to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message not compatible with receiver state" shall be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	See specific message content
2		→	RRC STATUS	
3		←	DOWNLINK DIRECT TRANSFER	Sent from a new CN domain.
4		→	RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Critical extensions	'FF'H

RRC STATUS (Step 2)

Message content is the same as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 1. 0
Protocol error information - Protocol error cause	Message extension not comprehended

DOWNLINK DIRECT TRANSFER (Step 3)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN domain identity NAS message	CS domain or PS domain as unselected domain Arbitrary message.

RRC STATUS (Step 4)

Message content is the same as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 3.
Protocol error information - Protocol error cause	Message not compatible with receiver state

8.1.6.1.5 Test requirement

After step 1 the UE shall transmit an RRC STATUS message on the DCCH using AM RLC setting "Message extension not comprehended" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

After step 3 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "Message not compatible with receiver state" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

8.1.6.2 Direct Transfer in CELL FACH state (invalid message reception and no signalling connection exists)

8.1.6.2.1 Definition

8.1.6.2.2 Conformance requirement

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED_SIGNALLING_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

...

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL_ERROR_REJECT to be set to TRUE according to TS 25.331 clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL_ERROR_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

- 1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

...

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";

Reference

3GPP TS 25.331 clause 8.1.9.3a, 8.1.9.4, 9.3b.

8.1.6.2.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which does not include any IEs except IE "Message Type". To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which includes an invalid IE "CN domain identity".

8.1.6.2.4

Method of test

Initial Condition

System Simulator: 1 cell.

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

The UE is in the CELL_FACH state. The SS transmits an invalid DOWNLINK DIRECT TRANSFER message to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message extension not comprehended" shall be indicated in IE "Protocol error cause". The SS transmits a DOWNLINK DIRECT TRANSFER message that contains an invalid IE "CN domain identity" to the UE. The UE shall transmit an RRC STATUS message on the DCCH using AM RLC. The error type "Message not compatible with receiver state" shall be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	See specific message content
2		→	RRC STATUS	
3		←	DOWNLINK DIRECT TRANSFER	Sent from a new CN domain.
4		→	RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER (Step 1)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Critical extentions	'01'H

RRC STATUS (Step 2)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received messag type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 1. 0
Protocol error information - Protocol error cause	Message extension not comprehended

DOWNLINK DIRECT TRANSFER (Step 3)

Use the same message content as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
CN domain identity	CS domain or PS domain as unselected domain
NAS message	Arbitrary message.

RRC STATUS (Step 4)

Message content is the same as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Identification of received message type - Received message type - RRC transaction identifier	DOWNLINK DIRECT TRANSFER Same value in the DOWNLINK DIRECT TRANSFER message in step 3.
Protocol error information - Protocol error cause	Message not compatible with receiver state

8.1.6.2.5 Test requirement

After step 1 the UE shall transmit an RRC STATUS message on the DCCH using AM RLC setting "Message extension not comprehended" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

After step 3 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "Message not compatible with receiver state" in IE "Protocol error cause" and "DOWNLINK DIRECT TRANSFER" in IE "Received message type".

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 815 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 New C-RNTI value at Step5 in 8.3.1.11 testcase.
Source:	⌘	Sasken Communication Technologies Limited
Work item code:	⌘	TEI
		Date: ⌘ 28/04/2004
Category:	⌘	F
		Use <u>one</u> 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 .
		Release: ⌘ Rel-5 Use <u>one</u> 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:	⌘	'1010 1010 1010 1010' is assigned to the UE during the RB Setup message. In order to check if the UE is properly updating a new CRNTI, new CRNTI value, set in CELL UPDATE CONFIRM should be an arbitrary string different from `1010 1010 1010 1010`
Summary of change:	⌘	Specific Message Contents at step 5 in CELL UPDATE CONFIRM , changed the New C-RNTI value to "Set to an arbitrary string different from '1010 1010 1010 1010'".
Consequences if not approved:	⌘	Test case may Fail a Conformant UE.

Clauses affected:	⌘	8.3.1.11.4						
Other specs affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X
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		⌘ 34.123-1						
Other comments:	⌘							

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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.

8.3.1.11 Cell Update: Success after T302 time-out

8.3.1.11.1 Definition

8.3.1.11.2 Conformance requirement

If any or several of the following conditions are true:

- expiry of timer T302;

...

the UE shall:

- 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> 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

8.3.1.11.3 Test purpose

1. To confirm that the UE repeats the transmission of CELL UPDATE message after failing to receive any response from the SS before T302 timer expires.

8.3.1.11.4 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.

Test Procedure

At the start of the test, the UE is brought to CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305 according to the system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH. The IE "Cell update cause" in this message shall be set to "periodical cell update". SS ignores this message, and the UE shall then re-transmit a CELL UPDATE message after the expiry of timer T302. When the SS has received (N302+1) such messages, it transmits a CELL UPDATE CONFIRM message with new values for "C-RNTI"

to the UE. Finally, the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts from CELL_FACH state. SS initializes its internal counter K to 0 and waits until the expiry of T305 timer.
2		→	CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause".
3				If K is equal to N302 then proceeds to step 5.
4				SS increments counter K, transmits no response to the UE and waits for an additional period equal to the value of timer T302. The next step is step 2.
5		←	CELL UPDATE CONFIRM	The message includes IEs "new C-RNTI". The IE "RRC State Indicator" is set to "CELL_FACH".
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		↔	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

CELL UPDATE (Step 2)

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 'Periodic cell updating'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '0000 0000 0000 0001' <u>'1010 1010 1010 1010'</u>

8.3.1.11.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 then transmit a CELL UPDATE message on the uplink CCCH, setting "periodical cell update" into IE "Cell update cause".

After step 2 the UE shall re-transmits a CELL UPDATE message after the expiry of timer T302. A total of $(N302+1)$ transmissions of CELL UPDATE message shall be detected in SS.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and stay at CELL_FACH state.

CHANGE REQUEST

⌘ **34.123-1 CR 816** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction to prose for test case 7.1.1.1		
Source:	⌘ Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 27/04/2004
Category:	⌘ D	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 approved T1#22 CR T1-040402 on 7.1.1.1 incorrectly updated in V5.7.1		
Summary of change:	⌘ At step 14 in Expected Sequence (section: FDD) change the comments to "TCTF Field is recognised as correct for the DCCH" instead of "TCTF Field is recognised as correct for the CCCH" as per approved T1#22 CR T1-040402		
Consequences if not approved:	⌘		

Clauses affected:	⌘ 7.1.1.1.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N		X	X			X	⌘	⌘ 34.123-1
Y	N										
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	X										
Other comments:	⌘										

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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.

7.1.1.1 CCCH mapped to RACH/FACH / Invalid TCTF

7.1.1.1.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the RACH/FACH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

7.1.1.1.2 Conformance requirement

CCCH mapped to RACH/FACH:

- TCTF field is included in MAC header.

TCTF	MAC SDU
------	---------

The following fields are defined for the MAC header:

- Target Channel Type Field
- ...

Coding of the Target Channel Type Field on FACH for FDD

TCTF	Designation
00	BCCH
01000000	CCCH
01000001- 01111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
10000000	CTCH
10000001- 10111111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
11	DCCH or DTCH over FACH

Coding of the Target Channel Type Field on FACH for TDD

TCTF	Designation
000	BCCH
001	CCCH
010	CTCH
01100	DCCH or DTCH over FACH
01101- 01111	Reserved (PDUs with this coding will be discarded by this version of the protocol)
100	SHCCH
101-111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.4.

7.1.1.1.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in the TCTF field.
2. To verify that the TCTF field is correctly applied when a CCCH is mapped to the RACH/FACH.

7.1.1.1.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters, Ciphering Off.

The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 (FDD) , 6.11.5.4.4.3(1.28Mcps TDD) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

FDD:

Higher layer	RAB/signalling RB	SRB#0	
	User of Radio Bearer	Test	
RLC	Logical channel type	CCCH	
	RLC mode	TM	
	Payload sizes, bit	168	
	Max data rate, bps	33600 (alt. 50400)	
	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	FACH	
	TB sizes, bit	168	
	TFS	TF0, bits	0 x 168
		TF1, bits	1 x 168
		TF2, bits	2 x 168
		TF3, bits	N/A (alt. 3 x 168)
	TTI, ms	10	
	Coding type	CC 1/2	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	752 (alt. 1136)	
RM attribute	200-240		
NOTE:	The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.		

TDD:

Higher layer	RAB/signalling RB	SRB#0
	User of Radio Bearer	Test
RLC	Logical channel type	CCCH
	RLC mode	TM
	Payload sizes, bit	171
	Max data rate, bps	33600 (alt. 50400)

	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	FACH	
	TB sizes, bit	171	
	TFS	TF0, bits	0 x 171
		TF1, bits	1 x 171
		TF2, bits	2 x 171
		TF3, bits	3 x 171
		TF4, bits	4x 171
		TF5, bits	N/A (alt. 5x 171)
		TF6, bits	N/A (alt. 6 x 171)
	TTI, ms	20	
	Coding type	CC 1/2	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	1528 (alt. 2292)	
RM attribute	200-240		
NOTE: The SS MAC layer must be configured not to add a MAC header so that the header can be added by the test case in order to create the necessary invalid values.			

And using the configuration in TS 34.108 clause 6.10.2.4.3.3 (FDD), 6.11.5.4.4.3(1.28Mcps TDD) for the PCH. The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4 (FDD), 6.11.5.4.4.3.1.4(1.28Mcps TDD).

User Equipment:

The UE shall operate under normal test conditions, Ciphering Off.

The Test-USIM shall be inserted.

The SS starts broadcasting the System Information as specified in TS 34.108 clause 6.1, using the configuration for the PRACH and SCCPCH (signalled in SYSTEM INFORMATION 5) as follows:

1. The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 (FDD), 6.11.5.4.4.3(1.28Mcps TDD) (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH).
2. The PRACH is configured as specified in TS 34.108 clause 6.10.2.4.4.1(FDD), 6.11.5.4.5.2(TDD).

The SS follows the procedure in TS 34.108 clause 7.2.2.1 (CS UE) or 7.2.2.2 (PS UE) so that the UE shall be in idle mode and registered.

Test procedure

- a) The SS pages the UE.
- b) The SS waits for the first RRC CONNECTION REQUEST message to arrive on the PRACH/CCCH.
- c) The SS responds with an RRC CONNECTION SETUP message (specified in TS 34.108 cclause 9: Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_FACH)(FDD), or UM (Transition to CELL_DCH) (1.28 Mcps TDD option). In this case the SS will transmit the message in 152 bit (note) segments, with a valid UM RLC header and with the MAC header set as follows:

FDD:

Field	Value
TCTF	01000001'B

TDD:

Field	Value
TCTF	000'B

- d) The SS waits for retransmission of the RRC CONNECTION REQUEST on the PRACH/CCCH due to expiry of timer T300. If no retransmission is received steps a) and b) are repeated.
- e) The SS repeats steps c) and d), with the TCTF field set as follows:

FDD:

Iteration	TCTF Value
2	(void)
3	10000000'B
4	10000001'B
5	(void)

TDD:

Iteration	TCTF Value
2	010'B
3	01100'B
4	01101'B
5	100
6	101'B

- f) The SS repeats steps c) and d), with the TCTF field set as to 01000000'B(FDD), 001'B(TDD).

Expected sequence

FDD:

Step	Direction		Message	Comments
	UE	SS		
1	←		PAGING TYPE 1	
2	→		RRC CONNECTION REQUEST	
3	-		Void	
4	-		Void	
5	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 0100 0001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 0100 0001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 0100 0001'B
6	→		RRC CONNECTION REQUEST	If this message is not received then the PAGING TYPE 1 message as in step 1 shall be sent again.
7	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 1000 0000'B
	←		MAC PDU(TCTF, UE-ID, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 1000 0000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 1000 0000'B
8	→		RRC CONNECTION REQUEST	If this message is not received then the PAGING TYPE 1 message as in step 1 shall be sent again.
9	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 1000 0001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 1000 0001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 1000 0001'B
10	→		RRC CONNECTION REQUEST	If this message is not received then the PAGING TYPE 1 message as in step 1 shall be sent again.
11	-		Void	
12	-		Void	
13	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with correct TCTF = 0100 0000'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with correct TCTF = 0100 0000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with correct TCTF = 0100 0000'B
14	→		RRC CONNECTION SETUP COMPLETE	TCTF Field is recognised as correct for the CGCH DCCH

TDD:

Step	Direction		Message	Comments
	UE	SS		
1	←		PAGING TYPE 1	
2	→		RRC CONNECTION REQUEST	
3	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 000'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 000'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 000'B
4	→		RRC CONNECTION REQUEST	
5	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 010'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 010'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 010'B
6	→		RRC CONNECTION REQUEST	
7	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 01100'B
	←		MAC PDU(TCTF, UE-ID, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 01100'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 01100'B
8	→		RRC CONNECTION REQUEST	
9	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 01101'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 01101'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 01101'B
10	→		RRC CONNECTION REQUEST	
11	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 100'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 100'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 100'B
12	→		RRC CONNECTION REQUEST	
13	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 101'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 101'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 101'B
14	→		RRC CONNECTION REQUEST	
15	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with correct TCTF = 001'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with correct TCTF = 001'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with correct TCTF = 001'B
16	→		RRC CONNECTION SETUP COMPLETE	TCTF Field is recognised as correct for the CCCH

Specific Message Contents

None.

7.1.1.1.5 Test Requirement

On the first iteration, and on each iteration in step e) the UE should not recognise the RRC CONNECTION SETUP message and therefore should either retransmit the RRC CONNECTION REQUEST after each expiry of T300 (the UE should send up to N300=3 RRC CONNECTION REQUESTs before abandoning the procedure) or not respond (if N300 RRC CONNECTION REQUESTs have already been sent).

On the final iteration the UE should respond with an RRC CONNECTION SETUP COMPLETE message.

CHANGE REQUEST

34.123-1 CR 818 # rev **-** # Current version: **5.7.1**

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 34.123-1 Rel-5: Corrections to MM test cases to emergency call support and authentication procedures.		
Source:	# Rohde & Schwarz, MCC 160		
Work item code:	# TEI Date: # 20/04/2004		
Category:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> # F Use <u>one</u> 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. </td> <td style="width: 50%; vertical-align: top;"> Release: # Rel-5 Use <u>one</u> 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) </td> </tr> </table>	# F Use <u>one</u> 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 .	Release: # Rel-5 Use <u>one</u> 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)
# F Use <u>one</u> 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 .	Release: # Rel-5 Use <u>one</u> 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. Emergency calls only such UEs which support emergency speech calls should be required to issue such calls 2. Authentication required to provide the UE with new keys if the UE has been made to delete its keys or has not yet been provided with keys an authentication procedure is required before cipherring and integrity can be started. These change align the prose to the TTCN.
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Summary of change:	# 1. Emergency calls ICS item corrected from 'speech' to 'emergency speech call' 2. Authentication required to provide the UE with new keys Authentication procedure added to the Expected Sequence
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Consequences if not approved:	# Conformant UE may fail the test case.
--------------------------------------	---

Clauses affected:	# 1. Emergency calls: tc_9_2_2, tc_9_4_2_1, tc_9_4_2_2_1, tc_9_4_2_3, tc_9_4_2_4_2, tc_9_4_3_2, tc_9_4_3_3, tc_9_5_7_1
--------------------------	--

		2. Authentication required to provide the UE with new keys: tc_9_4_2_2_1, tc_9_4_2_2_2, tc_9_4_2_4_5, tc_9_4_8										
Other specs affected:	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
	Y	N										
		X										
	X											
	X											
		Test specifications	34.123-3									
		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>

9.2.2 Authentication rejected by the network

9.2.2.1 Definition

9.2.2.2 Conformance requirement

- 1) After reception of an AUTHENTICATION REJECT message the UE shall:
 - 1.1 not perform normal location updating;
 - 1.2 not perform periodic location updating;
 - 1.3 not respond to paging with TMSI;
 - 1.4 reject any request from CM entity for MM connection except for emergency call;
 - 1.5 not perform IMSI detach if deactivated.
- 2) After reception of an AUTHENTICATION REJECT message the UE, if it supports [emergency speech call](#) ~~speech~~, shall accept a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) After reception of an AUTHENTICATION REJECT message the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.3.2.5.

9.2.2.3 Test purpose

- 1) To check that ,after reception of an AUTHENTICATION REJECT message, the UE:
 - 1.1 does not perform normal location updating;
 - 1.2 does not perform periodic location updating;
 - 1.3 does not respond to paging with TMSI;
 - 1.4 rejects any request from CM entity for MM connection except for emergency call;
 - 1.5 does not perform IMSI detach if deactivated.
- 2) To check that, after reception of an AUTHENTICATION REJECT message the UE, if it supports [emergency speech call](#) ~~speech~~, accepts a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and includes an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) To check that, after reception of an AUTHENTICATION REJECT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

9.2.2.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas a and b;

- IMSI attach/detach is allowed in both cells;
- the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has valid TMSI, CKSN (CKSN2) , CK and IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of [emergency speech call](#)~~speech~~ Yes/No.

Test procedure

The SS rejects an authentication. The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if USIM detachment is performed, switch off is performed, or the power is removed, depending on the UE (see ICS/IXIT).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2
2	→		PAGING RESPONSE	Establishment Cause: Terminating Conversational Call.. "Cipherring key sequence number" shall be the same as the value that was sent in the last AUTHENTICATION REQUEST message (= CKSN2).
3	←		AUTHENTICATION REQUEST	
4	→		AUTHENTICATION RESPONSE	
5	←		AUTHENTICATION REJECT	
6	SS			The SS releases the RRC connection.
7			Void	
8	←		PAGING TYPE 1	The UE is paged in cell B. "UE identity " IE contains TMSI. Paging Cause: Terminating Conversational Call.
9	UE			The UE shall ignore this message. This is verified during 3 s.
10	SS			The SS waits for at least for 15 s.
11	UE			A MO CM connection is attempted.
12	UE			The UE shall not initiate an RRC connection establishment on cell A or cell B. This is checked during 3 s.
13	UE			If the UE supports emergency speech call speech (see ICS), an emergency call is attempted.
14	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency call".
15			Void	
16			Void	
17	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. "Mobile identity": type of identity is set to IMEI.
18	←		CM SERVICE ACCEPT	
19	→		EMERGENCY SETUP	
20	←		RELEASE COMPLETE	"Cause" = unassigned number.
21	SS			The SS releases the RRC connection.
22			Void	
The following messages are sent and shall be received on cell A.				
23	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)
24	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 29). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
25	SS			The SS waits at least 7 minutes for a possible periodic updating.
26	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
27	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
28	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
29	UE			Depending on what has been performed in step 26 the UE is brought back to operation.
30	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
31			Void	
32			Void	
33	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
34	←		AUTHENTICATION REQUEST	"CKSN" = CKSN1.

Step	Direction		Message	Comments
	UE	SS		
35	→		AUTHENTICATION RESPONSE	
36	←		LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
37	→		TMSI REALLOCATION COMPLETE	
38		SS	Void	The SS releases the RRC connection.
39			Void	
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.

9.2.2.5 Test requirement

1)

1.1 At step 24 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.2 At step 25 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.3 At step 9 the UE shall not respond to paging.

1.4 At step 12 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.5 At step 28 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

2) At step 14 the UE shall send a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call"; and at step 17 the UE shall send a CM SERVICE REQUEST message with the "CM service type" set to "Emergency call establishment".

3) At step 33 the UE shall perform location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

9.4.2 Location updating / rejected

9.4.2.1 Location updating / rejected / IMSI invalid

9.4.2.1.1 Definition

9.4.2.1.2 Conformance requirement

1) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall:

1.1 not perform normal location updating;

1.2 not perform periodic location updating;

1.3 not respond to paging with IMSI;

1.4 not respond to paging with TMSI;

1.5 reject any request from CM entity for MM connection other than for emergency call;

1.6 not perform IMSI detach if it is switched off or has its power source removed.

- 2) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE, if it supports [emergency speech call](#)~~speech~~, shall accept a request for an emergency call by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.1.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "IMSI unknown in HLR", "illegal MS" or "Illegal ME".

9.4.2.1.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas of the same PLMN;
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has valid TMSI(= TMSI1), CKSN(= CKSN1) and CK, IK. It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

USIM removal possible while the UE is powered Yes/No.

Switch off on button Yes/No.

Support for [emergency speech call](#)~~speech~~ Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "IMSI unknown in HLR". The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE and the substate NO IMSI, i.e. does not perform normal location updating when a new cell of the same or another PLMN is entered, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls, does not perform IMSI detach if it is switched off or has its power source removed and deletes the stored LAI, CKSN and TMSI.

The test is repeated with cause value "Illegal MS" and with cause value "Illegal ME".

Expected sequence

The sequence is executed for execution counter $k = 1, 2, 3$.

Step	Direction		Message	Comments
	UE	SS		
1		SS		<p>The following messages are sent and shall be received on cell B.</p> <p>Set the cell type of cell B to the "Serving cell".</p> <p>Set the cell type of cell A to the "non-suitable cell". (see note)</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration".</p> <p>"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "Mobile Identity" = TMSI1</p> <p>"Reject cause" IE is "IMSI unknown in HLR" for $k = 1$, "Illegal MS" for $k = 2$, "Illegal ME" for $k = 3$.</p> <p>The SS releases the RRC Connection.</p>
2		SS		
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	
7		SS		
8			Void	
9		SS		<p>The following messages are sent and shall be received on cell A.</p> <p>Set the cell type of cell A to the "Serving cell".</p> <p>Set the cell type of cell B to the "non-suitable cell". (see note)</p> <p>The UE performs cell reselection according to procedure as specified in (this however is not checked until step 23). The UE shall not initiate an RRC connection establishment on cell A or on cell B.</p>
10		UE		
11		SS		<p>The SS waits at least 7 minutes for a possible periodic updating.</p> <p>The UE shall not initiate an RRC connection establishment on cell A or on cell B.</p>
12		UE		
13			PAGING TYPE 1	<p>The UE is paged in cell A. "UE identity" IE contains IMSI. Paging Cause: Terminating Conversational Call. The UE shall ignore this message. This is verified during 3 s.</p>
14		UE		
15			PAGING TYPE 1	<p>The UE is paged in cell A. "UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call. The UE shall ignore this message. This is verified during 3 s.</p>
16		UE		
17		UE		<p>A MO CM connection is attempted.</p> <p>The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.</p>
18		UE		
19		UE		<p>If the UE supports emergency speech call speech (see ICS), it is made to perform an emergency call.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Emergency call".</p>
20		SS		
This message is sent in cell A.				
21			Void	<p>"CM service type": Emergency call establishment.</p> <p>"Mobile identity": type of identity is set to IMEI.</p> <p>"Cause" = unassigned number.</p> <p>The SS releases the RRC connection.</p>
22			Void	
23	→		CM SERVICE REQUEST	
24	←		CM SERVICE ACCEPT	
25	→		EMERGENCY SETUP	
26	←		RELEASE COMPLETE	
27		SS		
28			Void	
29		UE		<p>If possible (see ICS) USIM detachment is performed.</p> <p>Otherwise if possible (see ICS) switch off is performed.</p> <p>Otherwise the power is removed.</p>

Step	Direction		Message	Comments
	UE	SS		
30	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
31	UE			Depending on what has been performed in step 29 the UE is brought back to operation.
32	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration".
33			Void	
34			Void	
35		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
36		←	AUTHENTICATION REQUEST	"CKSN" = CKSN2.
37		→	AUTHENTICATION RESPONSE	
37a	SS			The SS starts integrity protection.
38		←	LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
39		→	TMSI REALLOCATION COMPLETE	
40	SS			The SS releases the RRC connection.
41			Void	
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.

9.4.2.1.5 Test requirement

- 1) 1.1 At step 10 the UE shall not perform normal location updating.
- 1.2 At step 12 the UE shall not perform periodic location updating.
- 1.3 At step 14 the UE shall not respond to paging with IMSI.
- 1.4 At step 16 the UE shall not respond to paging with TMSI.
- 1.5 At step 18 the UE shall reject a MO CM connection.
- 1.6 At step 30 the UE shall not initiate an RRC connection establishment on cell A or on cell B.
- 2) At step 20 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".
- 3) At step 35 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the LAI IE set to "deleted LAI" on cell A.

9.4.2.2 Location updating / rejected / PLMN not allowed

9.4.2.2.1 Definition

9.4.2.2.2 Conformance requirement

- 1) If the network reject a location updating from the UE with the cause "PLMN not allowed" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 not perform IMSI detach when switched off;

- 1.3 not perform IMSI attach when switched on in the same location area;
- 1.4 not perform normal location updating when in the same PLMN and when that PLMN is not selected manually;
- 1.5 reject any request from CM entity for MM connection other than for emergency call.
- 2) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall:
 - 2.1 perform normal location updating when a new PLMN is entered;
 - 2.2 accept a request for an emergency call, if it supports [emergency speech call](#) ~~speech~~, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call".
- 3) If the network rejects a location updating from the UE with the cause "PLMN not allowed" and if after that the PLMN from which this rejection was received, is manually selected, the UE shall perform a normal location updating procedure.
- 4) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.2.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "PLMN not allowed".

9.4.2.2.4 Method of test

9.4.2.2.4.1 Location updating / rejected / PLMN not allowed / test 1

Initial conditions

- System Simulator:
 - one cell: C, belonging to PLMN1;
 - two cells: A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN and from PLMN1;
 - IMSI attach/detach is allowed in cells A and B but not in cell C;
 - the T3212 time-out value is 1/10 hour in cells A and B.
- NB: i) Cell C will be mapped to Cell 1 as found in TS 34.108 clause 6.1.4.1.
 - ii) Cell A and B will be mapped to Cell 4 and 5 respectively, as found in TS 34.108 clause 6.1.4.1.
- User Equipment:
 - the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell C;
 - the UE is in manual mode for PLMN selection.

Related ICS/IXIT statement(s)

USIM removal possible while the UE is powered Yes/No.

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Support for [emergency speech call](#)~~speech~~ Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not perform IMSI detach, does not perform IMSI attach if activated in the same location area, rejects any request for CM connection establishment other than emergency call, accepts a request for an emergency call, performs normal location updating only when a new PLMN is entered and deletes the stored LAI, CKSN and TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			<p>The following messages are sent and shall be received on cell B.</p> <p>The UE is switched off (or power is removed).</p> <p>Set the cell type of cell B to the "Serving cell".</p> <p>Set the cell type of cell A to the "Suitable neighbour cell".</p> <p>Set the cell type of cell C to the "non-suitable cell". (see note)</p> <p>The UE is switched on. (or power is reapplied) If necessary the UE is put in manual selection mode. The UE shall offer the new PLMN as available to the user. The PLMN is manually selected.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>"location updating type" = normal, "CKSN" = CKSN1, "LAI" = c, "Mobile Identity" = TMSI1</p> <p>"Reject cause" = PLMN not allowed.</p> <p>The SS releases the RRC connection.</p>
2	SS			
3	UE			
4	SS			
5			Void	
6			Void	
7	→		LOCATION UPDATING REQUEST	
8	←		LOCATION UPDATING REJECT	
9	SS			
10			Void	
11	SS			The SS waits for a possible periodic updating for 7 minutes.
12	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
13	UE			<p>If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.</p> <p>The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.</p>
14	UE			
15	UE			Depending on what has been performed in step 13 the UE is brought back to operation. The UE is not made to select PLMN 2.
16	UE			The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
17	SS			<p>The following message are sent and shall be received on cell A.</p> <p>Set the cell type of cell A to the "Serving cell".</p> <p>Set the cell type of cell B to the "Suitable neighbour cell". (see note)</p> <p>No access to the network shall be registered by the SS within one minute.</p>
18	UE			
19	UE			<p>If the UE supports emergency speech callspeech (see ICS) it is made to perform an emergency.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency Call".</p> <p>"CM service type" = Emergency call establishment.</p>
20	SS			
21			Void	
22			Void	
23	→		CM SERVICE REQUEST	

Step	Direction		Message	Comments
	UE	SS		
24	←		CM SERVICE ACCEPT EMERGENCY SETUP RELEASE COMPLETE	Cause IE: "unassigned number". The SS releases the RRC connection.
25	→			
26	←			
27	SS			
28			Void	
29	UE			A MO CM connection is attempted. The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
30	UE			
31	UE		Void Void LOCATION UPDATING REQUEST <u>AUTHENTICATION REQUEST</u> <u>AUTHENTICATION RESPONSE</u> LOCATION UPDATING ACCEPT TMSI REALLOCATION COMPLETE Void	The following messages are sent and shall be received on cell C. The UE is switched off. Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note) The UE is switched on. If necessary the UE is placed into the automatic mode. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration". "location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI. The SS starts integrity protection. "Mobile identity" = TMSI. The SS releases the RRC connection.
32	SS			
33	UE			
34	SS			
35				
36				
37	→			
37a	←			
37b	→			
37a 37c	SS			
38	←			
39	→			
40	SS			
41			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.2.4.2 Location updating / rejected / PLMN not allowed / test 2

Initial conditions

- System Simulator:
 - one cell C, belonging to PLMN1;
 - two cells A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN;
 - IMSI attach/detach is allowed in cells A and B but not in cell C;
 - the T3212 time-out value is 1/10 hour in cells A and B.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated" on cell C.

NB: i) Cell C will be mapped to Cell 1 as found in TS 34.108 clause 6.1.4.1.

ii) Cell A and B will be mapped to Cell 4 and 5 respectively, as found in TS 34.108 clause 6.1.4.1.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. Then the PLMN from which this rejection was received is manually selected and the SS checks that a normal location updating is performed.

Expected sequence

Step	Direction		Message	Comments	
	UE	SS			
1	UE			<p>The following messages are sent and shall be received on cell B.</p> <p>The UE is switched off (or power is removed). Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "non-suitable cell". (see note)</p> <p>The UE is switched on (or power is reapplied). If the UE is in manual mode, it shall offer the new PLMN as available to the user. In this case the PLMN is manually selected.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST</p> <p>← LOCATION UPDATING REJECT "Reject cause" = PLMN not allowed. The SS releases the RRC connection.</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST</p> <p>Void</p> <p>← LOCATION UPDATING REJECT "Reject cause" = PLMN not allowed. The SS releases the RRC connection.</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST</p> <p>"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.</p> <p>Void</p> <p>← LOCATION UPDATING REJECT "Reject cause" = PLMN not allowed. The SS releases the RRC connection.</p> <p>Void</p>	
2	SS				
3	UE				
3a	UE				
4	SS				
5			Void		
6			Void		
7		→	LOCATION UPDATING REQUEST		
8		←	LOCATION UPDATING REJECT		
9	SS		Void		
10			Void		
11	UE				
12	SS				
13			Void		
14			Void		
15		→	LOCATION UPDATING REQUEST		
15a	Void				
15b	←		LOCATION UPDATING REJECT		
16	SS				
17			Void		
The following messages are sent and shall be received on cell C.					
18	UE			<p>The UE is switched off. Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note)</p> <p>The UE is switched on. If necessary, the UE is put into the automatic mode.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST</p> <p>"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.</p> <p>← AUTHENTICATION REQUEST</p> <p>→ AUTHENTICATION RESPONSE</p> <p>SS starts integrity protection. "Mobile identity" = TMSI.</p> <p>← LOCATION UPDATING ACCEPT</p> <p>→ TMSI REALLOCATION COMPLETE</p> <p>SS releases the RRC connection.</p> <p>Void</p>	
19	SS				
20	UE				
21	SS				
22			Void		
23			Void		
24		→	LOCATION UPDATING REQUEST		
24a	←		AUTHENTICATION REQUEST		
24b	→		AUTHENTICATION RESPONSE		
24c	SS				
25	←		LOCATION UPDATING ACCEPT		
26	→		TMSI REALLOCATION COMPLETE		
27	SS				
28			Void		
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.2.5 Test requirement

- 1) 1.1 At step 12 in test 1 the UE shall not perform periodic updating.
 - 1.2 At step 14 in test 1 the UE shall not initiate an RRC connection establishment (IMSI detach).
 - 1.3 At step 16 in test 1 the UE shall not initiate an RRC connection establishment (IMSI attach).
 - 1.4 At step 16 in test 1 the UE shall not perform normal location updating.
 - 1.5 At step 30 in test 1 the UE shall reject a MO CM connection.
- 2) 2.1 At step 37 in test 1 the UE shall perform normal location updating.
 - 2.2 At step 20 in test 1 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".
- 3) At step 11 in test 2 the UE is made to search for PLMNs and the PLMN indicated by the SS is manually selected, and at step 15 the UE shall perform a normal location updating procedure.
- 4) At step 37 in test 1 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell C.

9.4.2.3 Location updating / rejected / location area not allowed

9.4.2.3.1 Definition

9.4.2.3.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 not respond to paging with TMSI;
 - 1.3 reject any request from CM entity for MM connection other than for emergency call;
 - 1.4 not perform IMSI detach.
 - 1.5 not delete the list of "equivalent PLMNs".
- 2) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:
 - 2.1 perform normal location updating when a new location area is entered;
 - 2.2 accept a request for an emergency call, if it supports [emergency speech call](#) ~~speech~~, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call";
 - 2.3 delete the list of forbidden LAs after switch off (power off).
- 3) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.3.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "Location Area not allowed".

To test that the UE deletes the list of forbidden LAs after switch off (power off).

9.4.2.3.4 Method of test

Initial conditions

- System Simulator:
 - three cells: A, B and C, belonging to different location areas a, b and c. Cell A and B belongs to PLMN1. Cell C belongs to PLMN2.
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both 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 TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell A.
 - the UE has a list of "equivalent PLMNs" containing PLMN1 and PLMN2.

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Support for [emergency speech call](#)~~speech~~ Yes/No.

Method to clear the list of forbidden location areas periodically.

Test Procedure

The SS rejects a normal location updating with the cause value "Location Area not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not respond to paging with TMSI, rejects any requests from CM entities for MM-connections except emergency calls, does not perform IMSI detach, does not delete the list of "equivalent PLMNs", performs normal location updating when a new location area is entered, deletes the list of forbidden LAs when switched off and deletes the stored LAI, CKSN and TMSI.

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		
1		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the " Suitable neighbour cell". Set the cell type of cell C to the " Suitable neighbour cell". (see note).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "Mobile Identity" = TMSI1
6	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed".
7		SS		After the sending of this message, the SS waits for the disconnection of the mainsignalling link. The SS releases the RRC connection.
8			Void	
9		SS		SS waits for a possible location updating for 7 minutes.
10		UE		The UE shall not initiate an RRC-connection establishment either on cell A, C or cell B.
11	←		PAGING TYPE 1	The UE is paged in cell B. "UE identity" = TMSI. Paging Cause: Terminating Conversational Call.
12		UE		The UE shall ignore this message. This is checked during 3 s.
13		UE		A MO CM connection is attempted.
14		UE		The UE shall not initiate an RRC connection establishment on cell A, C or cell B. This is checked during 3 s.
15		UE		If the UE supports emergency speech call (see ICS), it is made to perform an emergency call.
16		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency call".
17			Void	
18			Void	
19	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
20	←		CM SERVICE ACCEPT	
21	→		EMERGENCY SETUP	
22	←		RELEASE COMPLETE	Cause: "unassigned number".
23		SS		The SS releases the RRC connection.
24			Void	
25		UE		If possible (see ICS) switch off is performed. Otherwise the power is removed.
26		UE		The UE shall not initiate an RRC connection establishment on cell A, C or on cell B (check for IMSI detach) This is checked during 3 s.
27		UE		Depending on what has been performed in step 25 the UE is brought back to operation.
28		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
29			Void	
30			Void	
31	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI, "mobile identity" = IMSI (This checks the deletion of the forbidden lists)
32	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed".
33		SS		The SS releases the RRC connection.
34			Void	

The following messages are sent and shall be received on cell C.

Step	Direction		Message	Comments
	UE	SS		
35		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 "Serving cell". (see note).
36		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
37			Void	
38			Void	
39		→	LOCATION UPDATING REQUEST	
40		←	AUTHENTICATION REQUEST	
41		→	AUTHENTICATION RESPONSE	
41a		SS		The SS starts integrity protection.
42		←	LOCATION UPDATING ACCEPT	Mobile identity = TMSI.
43		→	TMSI REALLOCATION COMPLETE	
44		SS		The SS releases the RRC connection.
45			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.3.5 Test requirement

- 1) 1.1 At step 10 the UE shall not perform periodic updating.
 - 1.2 At step 12 the UE shall not respond to paging with TMSI.
 - 1.3 At step 14 the UE shall not initiate an RRC connection establishment.
 - 1.4 At step 26 the UE shall not initiate an RRC connection establishment (IMSI detach).
 - 1.5 At step 39 the UE shall perform normal location updating on cell C.
- 2) 2.1 At step 39 the UE shall perform normal location updating.
 - 2.2 At step 16 the UE shall accept a request for an emergency call.
 - 2.3 At step 31 the UE shall send a LOCATION UPDATING REQUEST message on cell B.
- 3) At step 31 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell B.

9.4.2.4 Location updating / rejected / roaming not allowed in this location area

9.4.2.4.1 Definition

9.4.2.4.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 not respond to paging with TMSI;

- 1.3 reject any request from CM entity for MM connection other than for emergency call;
- 1.4 not perform IMSI detach.
- 2) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:
 - 2.1 perform normal location updating when a new location area is entered;
 - 2.2 accept a request for an emergency call, if it supports [emergency speech call](#)~~speech~~, by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call";
 - 2.3 periodically search for its HPLMN.
- 3) The UE shall reset the list of "Forbidden location areas for roaming" when it is switched off or has its power source removed or when the USIM is removed.
- 4) The UE shall contain a list of "forbidden location areas for roaming". 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". The lists shall accommodate each 10 or more location area identifications.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.4.3 Test purposes

Test purpose 1

To test that on receipt of a rejection using the Roaming cause code, the UE ceases trying to update on that cell, that this situation continues for at least one periodic location interval period, and that the corresponding list is re-set by switching off the UE or removing its power source.

Test purpose 2

To test that if no cell is available, the UE does not answer to paging with TMSI, rejects a request from CM entity other than for emergency calls.

Test purpose 3

To test that at least 6 entries can be held in the list of "forbidden location areas for roaming" (the requirement 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.

Test purpose 5

To test that if the USIM is removed the list of "forbidden location areas for roaming" is cleared.

9.4.2.4.4 Method of test

Initial conditions

The initial conditions shall be met before each of the different procedures.

- System Simulator:

- for procedures 1, 2, 3 and 5: Two cells A and B, belonging to different location areas of the same PLMN with LAI a and b. The MCC of that PLMN is the same as that of the HPLMN. The MNC of that PLMN is different from that of the HPLMN;
- for procedure 4: three cells A, B, C of the same PLMN which is not the HPLMN with 3 different location area codes. Cells should differ in signal strength by 10 dB with cell A being the strongest and cell C the weakest. There should be a 20 dB range between A and C. A should be set to a level of - 40 dBm;
- IMSI attach/detach is allowed in every cell;
- the T3212 time-out value is 1/10 hour in every cell.
- User Equipment:
 - procedures 1, 2, 3 and 5: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B;
 - procedure 4: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell A;
 - the list of "forbidden location areas for roaming" shall be empty (this may be achieved by either removing the USIM or switching the UE OFF then ON or removing the UE power source depending on ICS).

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of [emergency speech call](#) ~~speech~~ Yes/No.

Method to clear the list of location areas for roaming periodically.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedures

Procedure 1:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The UE is turned off and then on. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on). This procedure is performed another time but the deletion of the list is checked while removing the USIM (instead of turning off the UE).

Procedure 2:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not answer to a paging message with TMSI, rejects a request from CM entity but supports an emergency call.

Procedure 3:

- The SS rejects a normal location updating 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 begin a location updating procedure on the non-allowed location areas.

Procedure 4:

- The SS accepts a periodic location updating on a cell not belonging to the HPLMN. Then when the UE attempts to perform a periodic location updating to this cell, the SS rejects this location updating with the cause value "Roaming not allowed in this location area". Two cells are then available, one belonging to the HPLMN but with the weakest level. It is checked that the UE returns to its HPLMN.

Procedure 5: If USIM removal is possible while UE is powered:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The USIM is removed and inserted in the UE. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on).

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

The following procedure is used during the test:

- change_LAI (x):
 - the purpose of this procedure is to change the value of Location Area Identifier of cell x;
 - the Location Area Identifier of cell x shall be changed. The code shall be chosen arbitrarily but shall be different from any previously used in this procedure. The code shall have the same MCC as the Home PLMN and shall not have the same MNC as the Home PLMN.

Procedure 1

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).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	Location Updating Type = normal.
6		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7		SS		The SS releases the RRC connection
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		If possible (see ICS) the UE is switched off. Otherwise if possible the power is removed.
12		UE		Depending on what has been performed in step 11 the UE is brought back to operation and placed in an automatic mode.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	Location Updating Type = normal.
16a		SS		The SS starts integrity protection.
17		←	LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18		SS		The SS releases the RRC connection.
19			Void	
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".				

Procedure 2

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 "Suitable neighbour cell". (see note).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message is sent on cell A.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7		SS		The SS releases the RRC connection.
8			Void	
9		SS		The following messages are sent and shall be received on cell B. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10			Void	
11			Void	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14		SS		The SS releases the RRC connection.
15			Void	
16		SS		The SS waits for a possible location updating procedure on both cells A and B for 2 minutes.
17		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 2 minutes after the end of step 15.
18	←		PAGING TYPE 1	"UE identity" = TMSI. This message is sent on cell A and on cell B.
19		UE		Paging Cause: Terminating Conversational Call. The UE shall not initiate an RRC connection on cell A or on cell B. This is checked during 3 s.
20		UE		A MO CM connection is attempted.
21		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
The following messages are sent and shall be received on cell A.				
Steps 22 to 31 are performed if the UE supports emergency speech call speech .				
22		UE		An emergency call is attempted.
23		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency Call".
24			Void	
25			Void	
26	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
27	←		CM SERVICE ACCEPT	
28	→		EMERGENCY SETUP	
29	←		RELEASE COMPLETE	"Cause" = unassigned number.
30		SS		The SS releases the RRC connection.
31			Void	
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Procedure 3

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". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16	SS			Change_LAI (A) within 5 s after step 13.
The following messages are sent and shall be received on cell A.				
17	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
18	←		RRC CONNECTION SETUP	
19	→		RRC CONNECTION SETUP COMPLETE	
20	→		LOCATION UPDATING REQUEST	
21	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24	SS			Change_LAI (B) within 5 s after step 21.
The following messages are sent and shall be received on cell B.				
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	
29	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
32	SS			Change_LAI (A) within 5 s after step 29.
The following messages are sent and shall be received on cell A.				
33	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
34	←		RRC CONNECTION SETUP	
35	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
36		→	LOCATION UPDATING REQUEST	
37		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
38		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39		→	RRC CONNECTION RELEASE COMPLETE	
40		SS		Change_LAI (B) within 5 s after step 37.
The following messages are sent and shall be received on cell B.				
41		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
42		←	RRC CONNECTION SETUP	
43		→	RRC CONNECTION SETUP COMPLETE	
44		→	LOCATION UPDATING REQUEST	
45		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
46		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
47		→	RRC CONNECTION RELEASE COMPLETE	
48		SS		The SS waits for a possible location updating procedure on both cells A and B for 7 minutes.
49		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 7 minutes after the end of step 47.
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Procedure 4

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell A.				
1		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes after the initial conditions have been established.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The location area identity of cell C shall be changed to that of a location area in the Home PLMN.
10		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message is sent on cell A within 7 minutes after the end of step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
15	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell C.				
18	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
22	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
23	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
24	→		RRC CONNECTION RELEASE COMPLETE	

Procedure 5

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		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	
6		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7				The SS releases the RRC connection.
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		The USIM is removed.
12		UE		The USIM is inserted into the ME.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	Location Updating Type = normal.
16a		←	AUTHENTICATION REQUEST	
16b		→	AUTHENTICATION RESPONSE	
16a 16c		SS		The SS starts integrity protection.
17		←	LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18		SS		The SS releases the RRC connection.
19			Void	
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.

9.4.2.4.5 Test requirement

- 1) 1.1 At step 10 in Procedure 1 the UE shall not perform periodic updating.
- 1.2 At step 19 in Procedure 2 the UE shall not respond to paging with TMSI.
- 1.3 At step 21 in procedure 2 the UE shall not initiate an RRC connection establishment.
- 1.4 After step 13 in Procedure 5 the UE shall perform location updating (at step 16; not perform IMSI detach).
- 2) 2.1 After step 9 in Procedure 2 the UE perform normal location updating (at step 12).
- 2.2 At step 23 in Procedure 2 the UE shall initiate a RRC CONNECTION REQUEST message with the establishment cause set to "Emergency call";
- 2.3 After step 14 in Procedure 4 the UE shall attempt to location updating with location updating type "periodic" (at step 21: periodically search for its HPLMN).
- 3) After step 12 in Procedure 5 the UE shall perform location updating (at step 16) when the USIM is removed.

- 4) At step 49 in Procedure 3 the UE shall not attempt to begin a location updating procedure.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

9.4.3.2 Location updating / abnormal cases / attempt counter less or equal to 4, LAI different

9.4.3.2.1 Definition

9.4.3.2.2 Conformance requirement

- 1) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure, if the attempt counter is smaller than 4 and after expiry of T3211, the UE shall resend its LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 2) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall:
 - 2.1 not answer to paging with the previously allocated TMSI;
 - 2.2 not perform the IMSI detach procedure, when switched off.
- 3) When a failure such as case e) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure and when an emergency call establishment is requested by the user the UE, if it supports [emergency speech call](#)~~speech~~, shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI and after acceptance by the network it shall send an EMERGENCY SETUP message.
- 4) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall use a request from CM entity other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall answer to paging with IMSI and shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
- 6) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall perform a normal location updating procedure as soon as it enters a new cell.

References

TS 24.008 clauses 4.4.4.2, 4.4.4.9.

9.4.3.2.3 Test purpose

To verify that the UE performs normal location updating procedures when its attempt counter is smaller than 4.

To check that the UE does not perform the IMSI detach procedure when "idle not updated".

To verify that when "idle not updated" the UE can perform an emergency call.

To verify that when "idle not updated" the UE uses requests from CM layer other than emergency call as triggering of a normal location updating procedure.

To verify that the UE performs a normal location updating procedure if it enters a new cell while being "idle not updated".

9.4.3.2.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B of the same PLMN, belonging to different location areas with LAI a and b;
 - ATT flag shall be set to IMSI attach/detach allowed.
- User Equipment:
 - the UE is "idle updated" on cell A. A valid CKSN value is stored in the USIM and is noted "initial CKSN". A TMSI is allocated.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support for [emergency speech call](#)~~speech~~ Yes/No.

Test Procedure

The UE is made to perform a normal location updating procedure. Five types of failure cases are triggered:

- sending of a Location Updating Reject with cause randomly chosen between all defined cause values except 2, 3, 6, 11, 12 and 13 (which trigger a different action) (case g of TS 24.008 clause 4.4.4.9);
- RRC connection failure (case d);
- sending of a RRC CONNECTION RELEASE message before the normal end of the procedure (case f);
- T3210 time-out (case e);
- RR connection establishment failure (case h).

As there is no stored LAI or the stored LAI is different from the broadcast LAI, and the attempt counter in the UE shall be lower than 4, the UE enters the state MM IDLE and substate ATTEMPTING TO UPDATE and waits for T3211 seconds before trying again a location updating procedure.

Then the behaviour of the UE in the MM IDLE state and ATTEMPTING TO UPDATE substate is checked, that is:

- not answer to paging with TMSI;
- not perform an IMSI detach procedure;
- support request for emergency call;
- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;
- perform normal location updating procedure when a new cell is entered.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
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	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
8	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
9	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15			(void)	
15a	→		CELL UPDATE	CCCH.
15b	←		RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
21	→		RRC CONNECTION RELEASE COMPLETE	
22		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
23	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	
26	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
27	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
28	→		AUTHENTICATION RESPONSE	

Step	Direction		Message	Comments
	UE	SS		
28a	←		SECURITY MODE COMMAND	
28b	→		SECURITY MODE COMPLETE	
29	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
30	→		TMSI REALLOCATION COMPLETE	
31	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
32	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
33		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)
34	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
35	←		RRC CONNECTION SETUP	
36	→		RRC CONNECTION SETUP COMPLETE	
37	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
38		SS		performs step 6 with reject cause #100 and step 7.
38a		UE		performs step8.
39	←		PAGING TYPE 1	UE identity = old TMSI of the UE. This message is sent continuously to the UE during 8 s. Paging Cause: Terminating Conversational Call.
40		SS		The SS checks that there is no answer from the UE during 12 s.
41		SS		If during steps 39 and 40 the UE attempts to perform a location updating procedure the SS will perform step 38 and then continue the procedure.
42		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) mobile switch off is performed. Otherwise the power is removed.
43		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during 30 s.
44		UE		Depending on what has been performed in step 42 the UE is brought back to operation.
45	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
46	←		RRC CONNECTION SETUP	
47	→		RRC CONNECTION SETUP COMPLETE	
48	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
49	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
50	→		AUTHENTICATION RESPONSE	
50a	←		SECURITY MODE COMMAND	
50b	→		SECURITY MODE COMPLETE	
51	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
52	→		TMSI REALLOCATION COMPLETE	
53	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
54	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
55		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).
56	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
57	←		RRC CONNECTION SETUP	
58	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
59		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
60		←	AUTHENTICATION REQUEST	Steps 60 and 61 are performed N times. N shall be chosen in such a way that T3210 expires.
61		→	AUTHENTICATION RESPONSE	
62		UE		The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
63		UE		If the UE supports emergency speech call speech it is made to perform an emergency call.
64		→	RRC CONNECTION REQUEST	Establishment cause: Emergency call.
65		←	RRC CONNECTION SETUP	
66		→	RRC CONNECTION SETUP COMPLETE	
67		→	CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.
68		←	CM SERVICE ACCEPT	
69		→	EMERGENCY SETUP	
70		←	RELEASE COMPLETE	Cause = unassigned number.
71		←	RRC CONNECTION RELEASE	
72		→	RRC CONNECTION RELEASE COMPLETE	
72a		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
73		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
74		←	RRC CONNECTION SETUP	
75		→	RRC CONNECTION SETUP COMPLETE	
76		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
77		←	AUTHENTICATION REQUEST	CKSN = initial CKSN.
78		→	AUTHENTICATION RESPONSE	
78a		←	SECURITY MODE COMMAND	
78b		→	SECURITY MODE COMPLETE	
79		←	LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
80		→	TMSI REALLOCATION COMPLETE	
81		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
82		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
83		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).
84		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
85		←	RRC CONNECTION SETUP	
86		→	RRC CONNECTION SETUP COMPLETE	
87		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
88		SS		performs step 14.
88a		(void)		
88b		→	CELL UPDATE	CCCH.
88c		←	RRC CONNECTION RELEASE	CCCH.
88d		SS		performs step 15c.
89		UE		A MO CM connection is attempted before T3211 expiry.
90		→	RRC CONNECTION REQUEST	Establishment cause: Registration.

Step	Direction		Message	Comments
	UE	SS		
91	←		RRC CONNECTION SETUP	
92	→		RRC CONNECTION SETUP COMPLETE	
93	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
94	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 96 to 100 will be omitted.
95	→		TMSI REALLOCATION COMPLETE	
96	←		RRC CONNECTION RELEASE	
97	→		RRC CONNECTION RELEASE COMPLETE	
97a	SS			
98	→		RRC CONNECTION REQUEST	Establishment cause: Not checked.
99	←		RRC CONNECTION SETUP	
100	→		RRC CONNECTION SETUP COMPLETE	
101	→		CM SERVICE REQUEST	CKSN = no key available, Mobile identity = TMSI.
102	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
103	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
104	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).
105	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
106	←		RRC CONNECTION SETUP	
107	→		RRC CONNECTION SETUP COMPLETE	
108	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
109	SS			performs step 14.
109a			(void)	
109b	→		CELL UPDATE	CCCH.
109c	←		RRC CONNECTION RELEASE	CCCH.
109d	SS			performs step 15c.
The following messages are sent and shall be received on cell A.				
110	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).
110a	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
110b	←		RRC CONNECTION SETUP	
110c	→		RRC CONNECTION SETUP COMPLETE	
110d	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
110e	SS			performs step 14.
110f	→		CELL UPDATE	CCCH.
110g	←		RRC CONNECTION RELEASE	CCCH.
110h	SS			performs step 15c.
111	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = IMSI.
112	→		PAGING RESPONSE	Establishment Cause: Terminating Conversation Call.
113	←		RRC CONNECTION RELEASE	"Mobile identity" = IMSI, CKSN = no key available.

Step	Direction		Message	Comments
	UE	SS		
114	→		RRC CONNECTION RELEASE COMPLETE	
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.

9.4.3.2.5 Test requirement

- 1) At step 13 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key available" and the Location Updating Type IE set to "normal location updating".
- 2)
 - 2.1 At step 40 the UE shall not answer to paging with the previously allocated TMSI.
 - 2.2 At step 43 the UE shall not perform the IMSI detach procedure.
- 3) At step 67 the UE shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
At step 69 the UE shall send an EMERGENCY SETUP message.
- 4) At step 93 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) At step 112 the UE shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
- 6) At step 110d the UE shall perform a normal location updating procedure.

9.4.3.3 Location updating / abnormal cases / attempt counter equal to 4

9.4.3.3.1 Definition

9.4.3.3.2 Conformance requirement

- 1) When four failures such as cases d) to h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall:
 - 1.1 perform location updating after T3212 expiry by sending a LOCATION UPATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type set to "normal location updating";
 - 1.2 if the T3212 initiated location updating was unsuccessful, then after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

- 2) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall not perform the IMSI detach procedure, when switched off.
- 3) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE, if it supports [emergency speech call](#)~~speech~~, shall be able to perform an emergency call i.e. the UE is able to send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI and then send an EMERGENCY SETUP message.
- 4) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:
 - 4.1 the UE shall use a request from CM entity for MM connection for a service other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating";
 - 4.2 after a location updating triggered by a request from the CM layer which was unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:
 - 5.1 the UE shall perform a normal location updating procedure if it enters a new cell;
 - 5.2 if this location updating is unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

References

TS 24.008 clause 4.4.4.9.

9.4.3.3.3 Test purpose

To verify that the UE performs normal location updating procedures after T3212 expiry, when its attempt counter has reached value 4 and that the UE reset its attempt counter after a timer T3212 expiry.

To verify that the UE still follows the MM IDLE state and ATTEMPTING TO UPDATE substate requirements after its attempt counter has reached value 4.

To verify that the attempt counter is reset in the cases where it has to be done.

9.4.3.3.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas a and b;
 - IMSI attach/detach is allowed in both cells;
 - T3212 is set to 6 minutes.
- User Equipment:
 - the UE is "Idle updated" on cell B with a valid CKSN and a TMSI.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of [emergency speech call](#)~~speech~~ Yes/No.

Test Procedure

The UE is made to perform a normal location updating. The SS triggers a failure in this procedure by modifying scrambling code of DL DPCH. After T3211 expiry the UE will try again the location updating procedure. The SS triggers again a failure by modifying it. This is done again 2 times. At this point the attempt counter shall be equal to 4. It is then checked that T3212 has been started and that at its expiry the UE will try a normal location updating procedure. It is verified that the UE has reset its attempt counter after timer T3212 expiry.

Then it is checked that, when the attempt counter has reached the value of 4, the UE is in the MM IDLE state and ATTEMPTING TO UPDATE substate, that is:

- not perform an IMSI detach procedure;
- support request for emergency call;
- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;
- perform normal location updating procedure when a new cell is entered.

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	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6	←		LOCATION UPDATING REJECT	IE Reject cause is set to #22 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
10	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15			(void)	
15a	→		CELL UPDATE	CCCH.
15b	←		RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20	←		AUTHENTICATION REQUEST	
21	→		AUTHENTICATION RESPONSE	Steps 20 and 21 are performed N times. N shall be chosen in such a way that T3210 expires.
22		UE		The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
23	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	
26	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
27	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.

Step	Direction		Message	Comments
	UE	SS		
28	→		RRC CONNECTION RELEASE COMPLETE	
29		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3212 (tolerance -15s; 45s) at least after the RRC connection is released.
30	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
31	←		RRC CONNECTION SETUP	
32	→		RRC CONNECTION SETUP COMPLETE	
33	→		LOCATION UPDATING REQUEST	location updating type: "normal location update" CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
34	←		LOCATION UPDATING REJECT	IE Reject cause = #17 "network failure".
35	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
36	→		RRC CONNECTION RELEASE COMPLETE	
37		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
38	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
39	←		RRC CONNECTION SETUP	
40	→		RRC CONNECTION SETUP COMPLETE	
41	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
42	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
43	→		AUTHENTICATION RESPONSE	
43a	←		SECURITY MODE COMMAND	
43b	→		SECURITY MODE COMPLETE	
44	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
45	→		TMSI REALLOCATION COMPLETE	
46	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
47	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
48		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).
49	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
50	←		RRC CONNECTION SETUP	
51	→		RRC CONNECTION SETUP COMPLETE	
52	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
53	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
54	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
55	→		RRC CONNECTION RELEASE COMPLETE	
56		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
57	→		RRC CONNECTION REQUEST	Establishment cause: Registration.

Step	Direction		Message	Comments
	UE	SS		
58	←		RRC CONNECTION SETUP	
59	→		RRC CONNECTION SETUP COMPLETE	
60	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
61		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
61a			(void)	
61b	→		CELL UPDATE	CCCH.
61c	←		RRC CONNECTION RELEASE	CCCH.
61d		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
61e		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
62	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
63	←		RRC CONNECTION SETUP	
64	→		RRC CONNECTION SETUP COMPLETE	
65	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
66	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
67	→		RRC CONNECTION RELEASE COMPLETE	
68		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
69	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
70	←		RRC CONNECTION SETUP	
71	→		RRC CONNECTION SETUP COMPLETE	
72	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
73		SS		performs step 53 and 54.
74		UE		performs step 55. If the UE supports emergency speech call speech , it is made to perform an emergency call.
75	→		RRC CONNECTION REQUEST	Establishment cause: Emergency call.
76	←		RRC CONNECTION SETUP	
77	→		RRC CONNECTION SETUP COMPLETE	
78	→		CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.
79	←		CM SERVICE ACCEPT	
80	→		EMERGENCY SETUP	
81	←		RELEASE COMPLETE	Cause = unassigned number.
82	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
83	→		RRC CONNECTION RELEASE COMPLETE	
84		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
85		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 30 s.
86		UE		Depending on what has been performed in step 84 the UE is brought back to operation.

Step	Direction		Message	Comments
	UE	SS		
87	→		RRC CONNECTION REQUEST	Establishment cause: Registration. location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN. IE mobile Identity = new TMSI. After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell B.
88	←		RRC CONNECTION SETUP	
89	→		RRC CONNECTION SETUP COMPLETE	
90	→		LOCATION UPDATING REQUEST	
91	←		AUTHENTICATION REQUEST	
92	→		AUTHENTICATION RESPONSE	
92a	←		SECURITY MODE COMMAND	
92b	→		SECURITY MODE COMPLETE	
93	←		LOCATION UPDATING ACCEPT	
94	→		TMSI REALLOCATION COMPLETE	
95	←		RRC CONNECTION RELEASE	
96	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
97		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).
98	→		RRC CONNECTION REQUEST	Establishment cause: Registration. location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded. The SS waits for the disconnection of the main signalling link. The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released. Establishment cause: Registration. location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
99	←		RRC CONNECTION SETUP	
100	→		RRC CONNECTION SETUP COMPLETE	
101	→		LOCATION UPDATING REQUEST	
102	←		LOCATION UPDATING REJECT	
103	←		RRC CONNECTION RELEASE	
104	→		RRC CONNECTION RELEASE COMPLETE	
105		UE		
106	→		RRC CONNECTION REQUEST	
107	←		RRC CONNECTION SETUP	
108	→		RRC CONNECTION SETUP COMPLETE	
109	→		LOCATION UPDATING REQUEST	
110		SS		
111			(void)	
111a	→		CELL UPDATE	
111b	←		RRC CONNECTION RELEASE	
111c		SS		
111d		UE		
112	→		RRC CONNECTION REQUEST	
113	←		RRC CONNECTION SETUP	
114	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
115	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
116	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
117	→		RRC CONNECTION RELEASE COMPLETE	
118	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
119	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
120	←		RRC CONNECTION SETUP	
121	→		RRC CONNECTION SETUP COMPLETE	
122	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
123			(void)	
123a	UE			performs step 61a.
123b	→		CELL UPDATE	CCCH.
123c	←		RRC CONNECTION RELEASE	CCCH.
123d	SS			performs step 61d.
124	UE			A MO CM connection is attempted before T3212 expiry.
125	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
126	←		RRC CONNECTION SETUP	
127	→		RRC CONNECTION SETUP COMPLETE	
128	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
129			(void)	
129a	UE			performs step 61a.
129b	→		CELL UPDATE	CCCH.
129c	←		RRC CONNECTION RELEASE	CCCH.
129d	SS			performs step 61d.
130	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
131	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
132	←		RRC CONNECTION SETUP	
133	→		RRC CONNECTION SETUP COMPLETE	
134	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
135	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
136	→		AUTHENTICATION RESPONSE	
136a	←		SECURITY MODE COMMAND	
136b	→		SECURITY MODE COMPLETE	
137	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 139 to 143 will be omitted.
138	→		TMSI REALLOCATION COMPLETE	
139	←		RRC CONNECTION RELEASE	
140	→		RRC CONNECTION RELEASE COMPLETE	UE is now "idle, updated" in cell A.
141	→		RRC CONNECTION REQUEST	
142	←		RRC CONNECTION SETUP	

Step	Direction		Message	Comments
	UE	SS		
143	→		RRC CONNECTION SETUP COMPLETE	
144	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI. cause #17 (network failure). The SS waits for the disconnection of the main signalling link.
145	←		CM SERVICE REJECT	
146	←		RRC CONNECTION RELEASE	
147	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
148		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).
149	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
150	←		RRC CONNECTION SETUP	
151	→		RRC CONNECTION SETUP COMPLETE	
152	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
153	←		LOCATION UPDATING REJECT	IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
154	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link
155	→		RRC CONNECTION RELEASE COMPLETE	
156		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
157	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
158	←		RRC CONNECTION SETUP	
159	→		RRC CONNECTION SETUP COMPLETE	
160	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
161		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
162			(void)	
162a	→		CELL UPDATE	CCCH.
162b	←		RRC CONNECTION RELEASE	CCCH.
162c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
162d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
163	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
164	←		RRC CONNECTION SETUP	
165	→		RRC CONNECTION SETUP COMPLETE	
166	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
167	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
168	→		RRC CONNECTION RELEASE COMPLETE	
169		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
170	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
171	←		RRC CONNECTION SETUP	
172	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
173	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
174	←		LOCATION UPDATING REJECT	IE Reject cause = "retry upon entry into a new cell".
174a	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
174b	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
175		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).
176	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
177	←		RRC CONNECTION SETUP	
178	→		RRC CONNECTION SETUP COMPLETE	
179	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
180		SS		performs the step 61.
181			(void)	
181a	→		CELL UPDATE	CCCH.
181b	←		RRC CONNECTION RELEASE	CCCH.
181c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
181d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
182	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
183	←		RRC CONNECTION SETUP	
184	→		RRC CONNECTION SETUP COMPLETE	
185	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
186	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
187	→		AUTHENTICATION RESPONSE	
187a	←		SECURITY MODE COMMAND	
187b	→		SECURITY MODE COMPLETE	
188	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
189	→		TMSI REALLOCATION COMPLETE	
190	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
191	→		RRC CONNECTION RELEASE COMPLETE	
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.

9.4.3.3.5 Test requirement

- 1) 1.1 At step 33 the UE shall perform location updating procedure.

1.2 At step 41 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

2) At step 85 the UE shall not perform the IMSI detach procedure.

3) At step 78 the UE shall send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI.

At step 80 the UE shall send an EMERGENCY SETUP message.

4)

4.1 At step 128 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating";

4.2 At step 134 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

5)

5.1 At step 179 the UE shall perform a normal location updating procedure if it enters a new cell;

5.2 At step 185 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

9.4.8 Location Updating after UE power off

9.4.8.1 Definition

Test to verify that the UE stores the equivalent PLMN list at UE power off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.2 Conformance requirement

The equivalent PLMN list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.

References

TS 24.008 4.4.4.6

9.4.8.3 Test purpose

To verify that the UE stores the equivalent PLMN list at UE switch off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.4 Method of test

Initial conditions

- System Simulator:
 - three cells: A, B and C. Cell A belongs to PLMN1 which is HPLMN. Cell B belongs to PLMN2. Cell C belongs to PLMN3.

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 is switched off;
- the UE is in automatic mode for PLMN selection,
- 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}	1 st	PLMN 1
EF _{PLMNwAcT}	Empty	
EF _{OPLMNwAcT}	1 st	PLMN 3
	2 nd	PLMN 2

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

When the UE is initially switched on it will perform a normal location updating in Cell A, which is the only suitable cell available and belongs to the HPLMN. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN2 in the equivalent PLMN list. The UE shall be switched-off. Cell A shall be made unavailable and Cells B and C shall be made available. When the UE is switched-on again, the UE shall perform a normal location updating in Cell B and not in Cell C because PLMN2 is stored in the UE equivalent PLMN list.

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Serving cell". Set the cell type of Cell B and Cell C to the "non-suitable cell". (see note)
2	UE			The UE is switched on by either using the Power Switch or by applying power.
3		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4			Void	
5			Void	
6		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
6a	←		AUTHENTICATION REQUEST	

6b	→	<u>AUTHENTICATION RESPONSE</u>	<p>The SS starts integrity protection. Equivalent PLMN List: PLMN 2 The SS releases the RRC connection. If possible (see ICS) switch off is performed. Otherwise the power is removed. Steps 9a to 9c may be performed or not depending on the action made in step 9.</p>
6ca	SS	LOCATION UPDATING ACCEPT	
7	←		
8	SS		
9	UE		
9a	SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
9b	→	IMSI DETACH INDICATION	
9c	SS		The SS releases the RRC connection.
10	SS	Void	<p>The following messages shall be sent and received on Cell B.</p> <p>Set the cell type of Cell A to the "non-suitable 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)</p>
11			
12	UE		Depending on what has been performed in step 9 the UE is brought back to operation.
13	SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14	→	Void	"Location Update Type": normal.
15		Void	
16		LOCATION UPDATING REQUEST	
16a	←	LOCATION UPDATING ACCEPT	The SS starts integrity protection.
17			SS
18		Void	
19			
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.8.5 Test requirements

At step 16 the UE shall perform a normal location updating in Cell B.

<END OF MODIFIED SECTION>

<START OF MODIFIED SECTION>

9.5.7 MM connection / abortion by the network

9.5.7.1 MM connection / abortion by the network / cause #6

9.5.7.1.1 Definition

9.5.7.1.2 Conformance requirement

At the receipt of the ABORT message the mobile station shall abort any MM connection establishment or call re-establishment procedure and release all MM connections (if any). If cause value #6 is received the mobile station shall delete any TMSI, LAI and ciphering key sequence number stored in the SIM, set the update status to ROAMING NOT ALLOWED (and store it in the SIM according to clause 4.1.2.2) and consider the SIM invalid until switch off or the SIM is removed. As a consequence the mobile station enters state MM IDLE, substate NO IMSI after the release of the RR connection.

The mobile station shall then wait for the network to release the RR connection - see clause 4.5.3.1.

Reference(s)

TS 24.008 clause 4.3.5.2.

9.5.7.1.3 Test purpose

To check that upon reception of an ABORT message with cause #6 during call establishment:

- the UE does not send any layer 3 message;
- after reception of an ABORT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN;
- the UE does not perform location updating, does not answer to paging with TMSI, rejects any request for mobile originating call except emergency call, does not perform IMSI detach;
- the UE accepts a request for emergency call.

9.5.7.1.4 Method of test

Initial Conditions

- System Simulator:
 - 2 cells, default parameters.
- User Equipment:
 - the UE has a valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT Statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of [emergency speech call](#) ~~speech~~ Yes/No.

Test procedure

A mobile originating CM connection is attempted. Upon reception of the AUTHENTICATION RESPONSE message, the SS sends an ABORT message with cause #6. The SS waits for 5 s. The UE shall not send any layer 3 message. The SS releases the RRC connection.

The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if deactivated.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1	UE			A mobile originating CM connection is attempted. CKSN = initial value, Mobile identity = TMSI
2			Void	
3			Void	
4			Void	
5		→	CM SERVICE REQUEST	
6		←	AUTHENTICATION REQUEST	
7		→	AUTHENTICATION RESPONSE	

Step	Direction		Message	Comments
	UE	SS		
8	←		ABORT	"reject cause" = #6.
9		SS		The SS waits for 5 s.
10		UE		The UE shall not send any layer 3 message during that time.
11		SS		SS releases the RRC connection.
12			Void	
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)
14		UE		The UE performs cell reselection according to procedure as specified in (this however is not checked until step 27). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
15		SS		The SS waits at least 7 minutes for a possible periodic updating.
16		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
17	←		PAGING TYPE 1	"UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
18		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is verified during 3 s.
19		UE		A MO CM connection is attempted.
20		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
21		UE		If the UE supports emergency speech call speech (see ICS), an emergency call is attempted.
22		SS		SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Emergency call".
23			Void	
24			Void	
25	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. CKSN = No key is available, Mobile identity = IMEI
26	←		CM SERVICE ACCEPT	
27	→		EMERGENCY SETUP	
28	←		RELEASE COMPLETE	"Cause" = unassigned number.
29		SS		SS releases the RRC connection.
30			Void	
31		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
32		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
33		UE		Depending on what has been performed in step 31 the UE is brought back to operation.
34		SS		SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Registration".
35			Void	
36			Void	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
38	←		AUTHENTICATION REQUEST	"CKSN" = CKSN1.

Step	Direction		Message	Comments
	UE	SS		
39	→		AUTHENTICATION RESPONSE	The SS starts integrity protection "Mobile Identity" = TMSI.
39a		SS		
40	←		LOCATION UPDATING ACCEPT	
41	→		TMSI REALLOCATION COMPLETE	
42		SS		SS releases the RRC connection.
43			Void	
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.

9.5.7.1.5 Test requirement

- 1) At step 10 the UE shall not send any layer 3 message.
- 2)
 - 2.1 At step 14 the UE shall not initiate an RRC connection establishment (not perform normal location updating).
 - 2.2 At step 16 the UE shall not initiate an RRC connection establishment.(not perform periodic location updating).
 - 2.3 At step 18 the UE shall not initiate an RRC connection establishment (not respond to paging with TMSI).
 - 2.4 At step 20 the UE shall not initiate an RRC connection establishment (reject any request for Mobile Originating call establishment).
 - 2.5 At step 32 the UE shall not initiate an RRC connection establishment.(not perform IMSI detach).
- 3) At step 22 the UE shall initiate RRC connection establishment with the establishment cause set to "emergency call".
- 4) At step 37 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

<END OF MODIFIED SECTION>

CHANGE REQUEST

34.123-1 CR 819 # rev - # Current version: **5.7.1**

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 package 3 RRC test case 8.4.1.26		
Source:	# Rohde & Schwarz		
Work item code:	# N/A	Date:	# 03/05/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# The test purpose and the test requirements contradicts with the conformance requirement. According to the conformance requirement (section 8.4.1.26.2), the measurement report message should be sent with IEs set as below: When event 2d is configured 4> set in "inter-frequency event results": "inter-frequency event identity" to "2d" and no IE "Inter-frequency cells" When event 2f is configured 4> set in "inter-frequency event results": "inter-frequency event identity" to "2f" and no IE "Inter-frequency cells"
Summary of change:	# Section 8.4.1.26.3: Removed the following statement in test purpose 1 and 2 <i>This MEASUREMENT REPORT message shall contain at least the best primary CPICH info (for FDD) or primary CCPCH info (for TDD) on the used frequency.</i> Section 8.4.1.26.5: Removed the following statement in test requirement 1 and 2 <i>IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for 1.28 Mcps TDD) of Cell 1.</i>
Consequences if not approved:	# Test requirement and test purpose will contradict the conformance requirement.

Clauses affected: # Clause 8.4.1.26.3, clause 8.4.1.26.5

Other specs affected:	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X		X		X	Other core specifications	⌘	
	Y	N											
		X											
	X												
	X												
		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.

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.
 - 2> 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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

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". ~~This MEASUREMENT REPORT message shall contain at least the best primary CPICH info(for FDD) or primary CCPCH info(for TDD)on the 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". ~~This MEASUREMENT REPORT message shall contain at least the best primary CPICH info(for FDD) or primary CCPCH info(for TDD)on the 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 /3.8 4 MHz	-55	-85
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	Unacknowledged Mode RLC
- Measurement reporting transfer mode	Event trigger
- Periodic reporting / Event trigger reporting mode	Not present
Additional measurement list	Inter-frequency measurement
- CHOICE measurement type	Not present
- Inter-frequency measurement objects list	Any valid identity other than that of Cell 1
- Inter-frequency cell removal	Any valid frequency other than that of Cell 1
- New inter-frequency info list	0
- Inter-frequency cell id	Not present
- Frequency Information	FALSE
- Cell info	TDD
- Cell individual offset	TDD
- Reference time difference to cell	1.28 Mcps TDD
- Read SFN Indicator	FALSE
- CHOICE mode	Any value of Cell parameters ID
- Primary CCPCH Info	FALSE
- CHOICE Mode	Not present
- CHOICE TDD option	Not present
- TSTD indicator	Not present
- Cell parameters ID	Not present
- SCTD indicator	Not present
- Primary CCPCH TX power	Inter-frequency reporting criteria
- Timeslot list	4
- Cell for measurement	TDD
- Inter-frequency measurement quantity	P-CCPCH RSCP
- CHOICE reporting criteria	
- Filter Coefficient	FALSE
- CHOICE mode	FALSE
- Measurement quantity for frequency quality estimate	FALSE
- Inter-frequency reporting quantity	FALSE
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	FALSE
- 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)(1.28 Mcps 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)(1.28 Mcps 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. ~~IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for 1.28 Mcps TDD) of Cell 1.~~
2. In step 7 the UE shall send MEASUREMENT REPORT message indicating event 2D. ~~IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for 1.28 Mcps TDD) of Cell 1.~~

CR-Form-v7

CHANGE REQUEST

34.123-1 CR 820 # rev - # Current version: **5.7.1**

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 package 3 RRC test case 8.2.4.1a		
Source:	# Rohde & Schwarz		
Work item code:	# N/A	Date:	# 03/05/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# According to the initial condition, the UE is brought to PS-DCCH+DTCH_DCH (state 6-10) by establishing a Mobile Terminated PS call. Since the PDCP info is present in RB Setup procedure, this will setup Loopback in the PDCP level (PDCP SAP). By sending Activate RB Test mode, the SS cannot expect the UE to switch the loopback scheme from PDCP to RLC. Therefore in order to configure Loopback at the RLC level the pdcp info should be set to OMIT.
Summary of change:	# 1) Section 8.2.4.1a.4: Modified the Initial condition. 2) Section 8.2.4.1a.4: Included information for Radio Bearer Setup message in Specific message Contents.
Consequences if not approved:	# A conformant UE may fail this test case.

Clauses affected:	# 8.2.4.1a.4										
Other specs affected:	#										
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td>Other core specifications</td> </tr> <tr> <td></td> <td>Test specifications</td> </tr> <tr> <td></td> <td>O&M Specifications</td> </tr> </table>	Y	N	#	X		Other core specifications		Test specifications		O&M Specifications
Y	N										
#	X										
	Other core specifications										
	Test specifications										
	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

8.2.4.1a Transport channel reconfiguration (Transmission Rate Modification) from CELL_DCH to CELL_DCH of the same cell: Success

8.2.4.1a.1 Definition

8.2.4.1a.2 Conformance requirement

1. If the UE receives:

- a TRANSPORT CHANNEL RECONFIGURATIONmessage; 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.

...

2. 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:
- 2> not change its current UL Physical channel configuration.

...

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;

...

4. 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.

...

5. If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

- 1> in addition, if the message was received in CELL_DCH state and the UE remains in CELL_DCH state according to subclause 8.6.3.3 applied on the received message:
- 2> for each optional IE part of the IE "Downlink information for each radio link" that is not present:
- 3> do not change its current downlink physical channel configuration corresponding to the IE, which is absent, if not stated otherwise elsewhere.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.6.4.

8.2.4.1a.3 Test purpose

To confirm that the UE reconfigures the physical channel and transport channel configuration according to a TRANSPORT CHANNEL RECONFIGURATION message, which specifies a reconfiguration by changing physical channel information and TFCS.

8.2.4.1a.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108. [The Contents of the Radio Bearer Setup message is specified in specific message contents.](#)

Note : Transmission rate shall be set to the maximum rate for the UE during the radio bearer establishment procedure.

Test Procedure

The UE is in CELL_DCH state.

The radio bearer is placed into UE test loop mode 1 described in TS 34.109 clause 5.3 and the UL RLC_SDU size for the loopback scheme is set to the maximum size possible when the maximum uplink TFS, as indicated in RADIO BEARER SETUP message during radio bearer establishment procedure, is used.

The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to modify the transmission rate which includes a new physical channel information and downlink TFCS to restrict the use of the highest rate TFCSs.

The UE shall reconfigure the new configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

UL MAC restriction is imposed on the SS so that SS can only receive using the maximum TFS and minimum TFS. Both TFSs belong to the currently limited downlink TFCS of the UE (i.e. the TFCS after reconfiguration).

Then the SS transmits a RLC_SDU whose size is the same as the UL RLC_SDU size for the loopback scheme. The UE receives this RLC_SDU and decode it according to the new TFCS.

The RLC_SDU is then looped backed to the SS. The SS should receive the expected data as a RLC_SDU exactly as the one transmitted to the UE.

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	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
2a		←	DOWNLINK RLC SDU	
2b		→	UPLINK RLC SDU	RLC SDU sent back shall be the same as the one sent from the SS.
3			Void	
4			Void	
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

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
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	
- SCCPCH TFCS	Not Present
- CHOICE mode	FDD
- CHOICE DL parameters	Explicit
- DL DCH TFCS	
- CHOICE TFCI Signalling	Normal
- TFCI Field 1 Information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfigure	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10.2.4 Parameter Set which is used in RADIO BEARER SETUP message in initial procedure.
- CTFC information	
- CTFC	Reference to TS 34.108 clause 6.10.2.4 Parameter Set as defined in RADIO BEARER SETUP message with highest rate CTFC removed.
- Power offset information	Not Present
Downlink information common for all radio links	
- CHOICE mode	FDD
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set. Set to a value that matches the new CTFC.
Downlink information for each radio link list	
- Downlink information for each radio links	
- CHOICE mode	FDD
- DL channelisation code	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set. Set to a value that matches the new CTFC.
Added or Reconfigured DL TrCH information	Not Present

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>RAB information for setup</u>	
<u>- RB information to setup</u>	
<u>- PDCP info</u>	<u>OMIT</u>

8.2.4.1a.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 2a the UE shall transmit a RLC_SDU that is same as the transmitted data from SS in step 2a on the radio access bearer.

CHANGE REQUEST

⌘ **34.123-1 CR 821** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 Requirement in Package 2 test case 9.3.1		
Source:	⌘ Anite		
Work item code:	⌘ TEI	Date:	⌘ 12/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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 T1#22 CR T1-040173 raised by Anite was implemented with an editorial error in specification TS 34.123-1 v5.7.1. As per the approved CR, Test requirement #4 should be "At step 6d the UE shall send its IMEISV as stored in the UE." In the specification it is incorrectly updated as "step 6" instead of "step 6d".		
Summary of change:	⌘ Correct the reference to the Test Sequence Step 6d in Test Requirement #4.		
Consequences if not approved:	⌘ The Test Sequence and Test Requirement will be inconsistent.		

Clauses affected:	⌘ 9.3.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">⌘</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N	⌘	X	X	⌘	⌘	X		
Y	N										
⌘	X										
X	⌘										
⌘	X										
Other comments:	⌘ Affects R99, Rel4 and Rel5 UEs										

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9.3 Identification

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.

9.3.1 General Identification

9.3.1.1 Definition

9.3.1.2 Conformance requirement

- 1) When requested by the network the UE shall send its IMSI.
- 2) When requested by the network the UE shall send the TMSI which it was previously allocated.
- 3) When requested by the network the UE shall send its IMEI as stored in the UE.
- 4) When requested by the network the UE shall send its IMEISV as stored in the UE.

Reference(s)

TS 24.008 clause 4.3.3.

9.3.1.3 Test purpose

- 1) To verify that the UE sends identity information as requested by the system in the following cases: IMSI and TMSI are requested in non-security mode, IMEI is requested in security mode.
- 2) To verify that the UE sends its IMEI, when requested to do so, in non- security mode.
- 3) To verify that the UE sends its IMEISV, when requested to do so, in non- security mode.

9.3.1.4 Method of test

9.3.1.4.1 Identification

Initial conditions

- System Simulator:
 - 1 cell, default values.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

IMEI of the UE.

IMEISV of the UE.

Test Procedure

The SS requests identity information from the UE:

- IMSI in non security mode;
- allocated TMSI in non security mode;

- IMEI in non security mode;
- IMEISV in non security mode;
- IMEI in security mode.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2		→	PAGING RESPONSE	
3		←	IDENTITY REQUEST	"Identity type" IE is IMSI.
4		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMSI of the UE.
5		←	IDENTITY REQUEST	"Identity type" IE is TMSI.
6		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the allocated TMSI of the UE.
6a		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
6b		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI of the UE.
6c		←	IDENTITY REQUEST	"Identity type" IE is IMEISV.
6d		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEISV of the UE.
7		SS		The SS starts ciphering and integrity protection.
8			Void	
9		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
10		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI stored in the UE.
11		SS		The SS releases the RRC connection.
12			Void	

Specific message contents

None.

9.3.1.5 Test requirement

- 1) At step 4 the UE shall send its IMSI.
- 2) At step 6 the UE shall send the TMSI which it was previously allocated.
- 3) At step 6b and step 10 the UE shall send its IMEI as stored in the UE.
- 4) At step 6d the UE shall send its IMEISV as stored in the UE.

9.3.2 Handling of IMSI shorter than the maximum length

9.3.2.1 Definition

CR-Form-v7	
CHANGE REQUEST	
№ 34.123-1 CR 823	№ rev - № Current version: 5.7.1 №

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:	№ Changes to test procedure of Idle Mode Cell Reselection test case 6.2.2.3 (Revision of T1-040587)		
Source:	№ Sasken Communication Technologies Ltd.,		
Work item code:	№ TEI	Date:	№ 28/04/2004
Category:	№ F	Release:	№ REL-5

Reason for change:	№ According to the Test Procedure, Method B is applied, which says that any Random Access Request from the UE is responded with an IMMEDIATE ASSIGNMENT REJECT (GERAN cell) or RRC CONNECTION REJECT (UTRAN cell) message . According to Section 8.1.3.9 in 25.331,if the RRC Connection Reject message includes the Inter-RAT info IE, the UE does a cell reselection to the target RAT, else it retransmits RRC Connection Request till V300<=N300. Similarly in Section 3.3.1.1.3.2 of 4.18, a MS enters the CCCH idle mode on reception of Immediate Assignment Reject. Hence no automatic cell reselection will occur here as specified in Test Procedure
Summary of change:	№ In Step c) SS does not respond to any Random Access Requests. The Response to Random Access Requests is not given in either Cell 9 or Cell1 in Step c) to enable automatic cell-reselection.
Consequences if not approved:	№ The UE will not behave in the expected manner.

Clauses affected:	№ 6.2.2.3.4						
Other specs Affected:	<table border="1" style="font-size: x-small;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> </table>	Y	N	X		Other core specifications	№ 34.123-1 clause 6.2.2.3
	Y	N					
	X						
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X							
Other comments:	№						

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6.2.2.3 Cell reselection timings; GSM to UTRAN

6.2.2.3.1 Definition

Test to verify that the UE meets the cell reselection timing requirements when both a GSM and UTRAN network is available.

6.2.2.3.2 Conformance requirement

1. If the 3G Cell Reselection list (see TS 04.18) includes UTRAN frequencies, the MS shall, at least every 5 s update the value RLA_C for the serving cell and each of the at least 6 strongest non-serving GSM cells.
 - 1.1 The MS shall then reselect a suitable UTRAN cell if its measured RSCP value exceeds the value of RLA_C for the serving cell and all of the suitable non-serving GSM cells by the value XXX_Qoffset for a period of 5 s and, for FDD, the UTRAN cells measured Ec/No value is equal or greater than the value FDD_Qmin.
 - Ec/No and RSCP are the measured quantities.
 - FDD_Qmin and XXX_Qoffset are broadcast on BCCH of the serving cell. XXX indicates other radio access technology/mode.
 - 1.2 In case of a cell reselection occurring within the previous 15 s, XXX_Qoffset is increased by 5 dB.
 - 1.3 Cell reselection to UTRAN shall not occur within 5 s after the MS has reselected a GSM cell from an UTRAN cell if a suitable GSM cell can be found.
 - 1.4 If more than one UTRAN cell fulfils the above criteria, the UE shall select the cell with the greatest RSCP value.
2. The MS shall be able to identify and select a new best UTRAN cell on a frequency, which is part of the 3G Cell Reselection list, within 30 s after it has been activated under the condition that there is only one UTRAN frequency in the list and under good radio conditions.

The allowed time is increased by 30 s for each additional UTRAN frequency in the 3G Cell Reselection list. However, multiple UTRAN cells on the same frequency in the neighbour cell list does not increase the allowed time.

NOTE: Definitions of measurements are in TS 25.215 and TS 25.101 for FDD mode, in TS 25.225 and TS 25.102 for TDD mode, clause 3.2 and TS 05.08, clause 6.1.

References

1. TS 05.08, clause 6.6.5.
2. TS 05.08, clause 6.6.4.

6.2.2.3.3 Test purpose

1. To verify that:
 - 1.1 The UE meets conformance requirement 1.1 and additionally, that no cell reselection is performed if the period is less than 5 s
 - 1.2 The UE meets conformance requirement 1.2.
 - 1.3 The UE meets conformance requirement 1.3.

6.2.2.3.4 Method of test

Initial conditions

UE is idle updated on Cell 9.

Cell 9 and Cell 10:

The SS transmitted system information for Cell 1 and Cell 2 shall be according to TS 34.108, clause 6.1.4 with the following exceptions:

The 3G Neighbour Cell Description of Cell 9 (GSM) and Cell 10 (GSM) refers Cell 1 (UTRAN).

SYSTEM INFORMATION TYPE 3 REST OCTETS

- SI2q indicated on BCCH Norm

SYSTEM INFORMATION TYPE 2QUATER

Information Element	Value/remark
< RR management Protocol Discriminator bit (4) >	'0110'B
< Skip Indicator : bit (4) >	'0000'B
< Message type : bit (8) >	'0000 0111'B
< SI2 quarter Rest Octets >	
< BA_IND : bit >	0
< 3G_BA_IND : bit >	0
< MP_CHANGE_MARK : bit >	0
< SI2quater_INDEX : bit (4) >	'0000'B
< SI2quater_COUNT : bit (4) >	'0000'B
0 1 < Measurement_Parameters Description >	0
0 1 < GPRS_Real Time Difference Description >	0
0 1 < GPRS_BSIC Description >	0
0 1 < GPRS_REPORT PRIORITY Description >	0
0 1 < GPRS_Measurement_Parameters Description >	0
0 1 < NC Measurement Parameters >	0
0 1 < extension length >	0
0 1 < 3G Neighbour Cell Description >	1
0 1 < Index_Start_3G : bit (7) >	0
0 1 < Absolute_Index_Start_EMR : bit (7) >	0
0 1 < UTRAN FDD Description >	1
0 1 < Bandwidth_FDD : bit (3) >	0
1 < Repeated UTRAN FDD Neighbour Cells > ** 0	1
0 < FDD-ARFCN : bit (14) >	0 See TS 34.108, clause 6.1.5, table 6.1.1
< FDD_Indic0 : bit >	0
< NR_OF_FDD_CELLS : bit (5) >	'00001'B
< FDD_CELL_INFORMATION Field >	10 bits Scrambling code according to TS 34.108, clause 6.1.4, Default settings for cell No.1
1 < Repeated UTRAN FDD Neighbour Cells > ** 0	0
0 1 < UTRAN TDD Description >	0
0 1 < 3G MEASUREMENT Parameters Description >	1
< Qsearch_I : bit (4) >	'0111'B (Always)
< Qsearch_C_Initial : bit (1) >	0
0 1 < FDD_Qoffset : bit (4) >	1 '1000'B (0 dB)
< FDD_REP_QUANT : bit (1) >	0
< FDD_MULTIRAT_REPORTING : bit (2) >	'00'B
< FDD_Qmin : bit (3) >	'111'B (-12 dB)
0 1 < TDD_Qoffset : bit (4) >	0
0 1 < GPRS_3G_MEASUREMENT Parameters Description >	1
< Qsearch_P : bit (4) >	'1111'B (Never)
< 3G_SEARCH_Prio : bit >	0
0 1 < FDD_REP_QUANT : bit >	0
0 1 < FDD_REPORTING_OFFSET : bit (3) >	0
0 1 < TDD_MULTIRAT_REPORTING : bit (2) >	0
0 1 < TDD_REPORTING_OFFSET : bit (3) >	0

Cell 1:

The SS transmitted system information for Cell 1 shall be according to TS 34.108, clause 6.1.4 with the following exceptions:

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 9 (GSM) and Cell 10 (GSM).

Step a-c:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
Test Channel		1	2
RF Signal Level	dBm	-70	-85
RXLEV_ACCESS_MIN	dBm	-100	-100
MS_TXPWR_MAX_CCH	dBm	Max. output power of UE	Max. output power of UE
FDD_Qmin	dBm	-20	-20
FDD_Qoffset	dB	5	5

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH_Ec (FDD)	dBm / 3.84 MHz	-74
P-CCPCH_RSCP (TDD)	dBm	-74
Qrxlevmin	dBm	-101
Srxlev*	dB	27

Step d-g:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-70 -> -82 (4 s) -> -70	OFF

Step h-j:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-82 -> -70	OFF

Step k-m:

Parameter	Unit	Cell 9 (GSM)	Cell 10 (GSM)
RF Signal Level	dBm	-82 -> -70 -> -82	OFF

Test procedure

NOTE: Step a-c): Test purpose 1.3. Step d-g): test purpose 1.1. Step h-k): test purpose 1.2.

Method B is applied.

- a) The SS activates the channels. The UE is not paged on any of the cells.
- b) Void
- c) After 50 s, the SS starts paging continuously on cells 9 and 1 for 20 s. The SS monitors cells 9 and 1 for random access requests from the UE. [The SS does not respond to any of the random access requests to trigger automatic cell reselection.](#)
- d) Cell 10 is switched off. The SS stops paging on the cells and waits for 20 s. (The UE should revert to Cell 9 due to cell reselection).

- e) The SS starts paging continuously on Cell 1.
- f) The SS decreases the transmit level of Cell 9 to -82 dBm for a period of 4 s (RSCP will then exceed RLA_C value of Cell 9 by more than XXX_Qoffset) and then changes the level back to -70 dBm.
- g) The SS waits to see if there is any random access requests from the UE on Cell 1.
- h) The SS stops paging on all cells and sets the transmit level of Cell 9 to -82 dBm.
- i) The SS waits 20 s and then starts paging continuously on Cell 9. (The UE should revert to Cell 1 due to cell reselection).
- j) The SS increases the transmit level of Cell 9 to -70 dBm and waits for the UE to access on Cell 9. The SS records the time t from the increase in the level of Cell 9 to the first response from the UE.
- k) The SS stops paging on all cells and sets the transmit level of Cell 9 back to -82 dBm.
- l) The SS waits 20 s (The UE should revert to Cell 1 due to cell reselection).
- m) The SS increases the transmit level of Cell 9 to -70 dBm. After $t+2$ s (i.e. 2 s after reselection to Cell 9), the SS starts paging continuously on Cell 1, changes the level of Cell 9 back to -82 dBm and waits to see if there is any random access request on Cell 1. (Within 15 sec after cell reselection to GSM, the level of Cell 9 is $-82 + 10$ dBm= -72 dBm. After the 15 s period, the level of Cell 9 is $-82 + 5$ dBm= -77 dBm. The level of Cell 1 is -74 dBm, thus leading to reselection to Cell 1 after 15 s).

6.2.2.3.5 Test Requirements

- 1) In step c), after the UE has reselected Cell 9 from Cell 1 as indicated by random access requests, any random access requests on Cell 1 shall not occur within 4,5 s of the last random access request on Cell 9.
- 2) In step g), there shall be no access on Cell 1 within 34 s of decreasing the level of Cell 9.
- 3) In step j), the UE shall respond on Cell 9.
- 4) In step m), there shall be no response on Cell 1 within 11 s after the level of Cell 9 is changed back to -82 dBm.

NOTE: The 11 s is derived from $(t+15)$ s minimum cell reselection timer minus $(t+2)$ s from the start of step m) up to the decrease of the level of Cell 9. A further 2 s are subtracted to cover for any uncertainty introduced by the random access process occurring after step g).

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 824** ⌘ rev - ⌘ Current version: **5.7.1** ⌘

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:	⌘ Re-instatement of Test Requirements to meet the Test Purpose in 7.2.3.24 and 7.2.3.27 (Merged with T1-040550 and revised from T1-040918)		
Source:	⌘ Anite, Sasken Communication Technologies Limited		
Work item code:	⌘ TEI	Date:	⌘ 11/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ CR T1-040262 removed certain Test Requirements from 7.2.3.24 and 7.2.3.27 to match the TTCN provided by MCC160. However, with the removal of these Test Requirements parts of the Test Purpose are no longer met. The approved T1#22 CR T1-040264 incorrectly updated in V5.7.1 for testcase 7.2.3.27
Summary of change:	⌘ Re-instate the Test Requirements 3) for 7.2.3.24 and Test Requirement 2) for 7.2.3.27 as per 34.123-1 V5.6.0. so that only one poll/status PDU may be received during the respective time periods. The specification defines that only one of the polls/status PDU may be received. At step 8, SS waits to receive a second STATUS PDU and notes the time. This time will be recorded as T ₂ Changed the step 9 to VOID.
Consequences if not approved:	⌘ The Test Requirements for TCs 7.2.3.24 and 7.2.3.27 do not satisfy the complete Test Purpose of the respective tests. The Test Sequence in the prose will be invalid and not match the TTCN.

Clauses affected:	⌘ 7.2.3.24, 7.2.3.27										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘ TS 34.123-3
Y	N										
	X										
	X										
	X										
		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 >>

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	...	SS continues to transmit RLC SDUs
3		←	DOWNLINK RLC PDU	SDU ceil(Tx_Window_Size * 60%)
4		→	UPLINK RLC PDU	SDU 1
5		→	UPLINK RLC PDU	SDU 2
6		→	...	SS continues to receive RLC PDUs
7		→	UPLINK RLC PDU	SN = poll_PDU - 1, 1 st Poll, Timer_Poll started
8		→	Void	
9		→	Void	
10		→	UPLINK RLC PDU	SS continues to receive RLC PDUs
11		→	UPLINK RLC PDU	SN= ceil(Tx_Window_Size * 60%)-1, 2 nd Poll, Timer_Poll restarted. Note T1
12		→	Void	
13		→	Void	
14		→	Void	
15		→	UPLINK RLC PDU	SS waits for reception of PDU with poll bit set, 3 rd Poll, Timer_Poll expired. Note T2
16		→	RB RELEASE	Optional step

NOTE: The Expected Sequence shown is informative.
The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.
Information such as SDU, PDU or Sequence numbers given in the comments column shall be considered informative only, for test case development purposes.

7.2.3.23.5 Test requirements

The measured time $T_2 - T_1$ shall be 600 ms.

7.2.3.24 Polling for status / Operation of timer Timer_Poll_Prohibit

7.2.3.24.1 Definition

This case tests that the UE will not send a poll request within Timer_Poll_Prohibit ms of a previous poll request when this mode of operation is enabled. Incorrect operation of polling will cause degradation of service, or possible service failure.

7.2.3.24.2 Conformance requirement

The timers defined in this subclause are normative. The timers shall be considered active from the time they are started until the time they either expire or are stopped.

b) Timer_Poll_Prohibit.

This timer shall only be used when so configured by upper layers. It is used to prohibit transmission of polls within a certain period. The value of the timer is signalled by upper layers.

In the UE this timer shall be started when the successful or unsuccessful transmission of an AMD PDU containing a poll is indicated by lower layer. In UTRAN it should be started when an AMD PDU containing a poll is submitted to lower layer.

From the time a poll is triggered until the timer expires, polling is prohibited. If another poll is triggered while polling is prohibited, its transmission shall be delayed until the timer expires (see subclause 9.7.1). Only one poll shall be transmitted when Timer_Poll_Prohibit expires even if several polls were triggered in the meantime. This timer shall not be affected by the reception of STATUS PDUs.

When Timer_Poll_Prohibit is not configured by upper layers, polling is never prohibited.

The Sender shall:

- if a poll has been triggered by one or several poll triggers (see subclause 9.7.1):
 - if polling is not prohibited, see subclause 9.5:
 - set the "Polling bit" in the AMD PDU header to "1";
 - otherwise:
 - set the "Polling bit" in the AMD PDU header to "0".

Reference

TS 25.322 clauses 9.5, 9.7.1 and 11.3.2.1.1.

7.2.3.24.3 Test purpose

1. To verify that no poll is transmitted if one or several polls are triggered when the Timer_Poll_Prohibit timer is active and has not expired.
2. To verify that the UE polls only once after Timer_Poll_Prohibit expires even though triggered several times during the prohibit time.

7.2.3.24.4 Method of test

Initial conditions

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 AM 7-bit "Length Indicator" tests in clause 7.2.3.1.

The following RLC parameter values are used in place of the values in clause 7.2.3.1:

Uplink RLC	
Polling info	
Timer_poll_prohibit	500
Last transmission PDU poll	FALSE
Poll_PDU	2
Poll_Window	50
Transmission window size	32
Downlink RLC	
Receiving window size	128

These settings apply to both the uplink and downlink DTCH.

The Radio Bearer is placed in UE test loop mode 1 with the UL SDU size set to AM_7_PayloadSize - 1 bytes.

Test procedure

Let T be the value of the Timer_Poll_Prohibit timer.

- a) The SS starts transmission of at least $(2 * \text{Poll_PDU}) + \text{ceil}(T / \text{TTI})$ SDUs of size AM_7_PayloadSize - 1 bytes.
- b) Whilst transmitting, the SS receives PDUs from the UE, and notes the time on receiving the first PDU with the P bit set. This time will be recorded as T_1 .

- c) The SS does not respond to the poll request.
- d) The SS continues to receive PDUs from the UE and notes the time on receipt of the next PDU with the P bit set. This time will be recorded as T_2 .
- e) The SS waits for at least `Timer_Poll_Prohibit` to acknowledge any last Poll PDU from the UE.
- f) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	...	SS continues to transmit RLC SDUs
3		←	DOWNLINK RLC PDU	SDU ($2 \cdot \text{Poll_PDU}$) + $\text{ceil}(T/\text{TTI})$
4		→	UPLINK RLC PDU	SDU 1
5		→	UPLINK RLC PDU	SDU 2
6		→	...	SS continues to receive RLC PDUs
7		→	UPLINK RLC PDU	SN = $\text{Poll_PDU} - 1$, Poll: Note T_1
8		→	...	SS continues to receive RLC PDUs
9			Void	
10		→	UPLINK RLC PDU	SN = $(\text{Transmission Window Size} / 2) - 1$, No Poll
11		→	...	SS continues to receive RLC PDUs
12		→	UPLINK RLC PDU	SN = $\text{Poll_PDU} + \text{ceil}(T/\text{TTI}) - 1$, Poll: Note T_2
12a		→	...	SS continues to receive RLC PDUs acknowledging with STATUS PDUs when polled until all PDUs have been received and acknowledged
13			RB RELEASE	Optional step

NOTE: The Expected Sequence shown is informative. The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity. Information such as SDU, PDU or Sequence numbers given in the comments column shall be considered informative only, for test case development purposes.

7.2.3.24.5 Test requirements

1. ~~+~~The measured time $T_2 - T_1$ shall be `Timer_poll_prohibit` ms.
2. After step 12 no further poll shall be received from the UE for the next `Timer_poll_prohibit` ms.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>**7.2.3.27 Receiver Status Triggers / Operation of timer Timer_Status_Prohibit****7.2.3.27.1 Definition**

This case tests that the UE does not transmit a status report more often than every Timer_Status_Prohibit ms when this mode of operation is enabled. Incorrect operation of status reporting will cause degradation of service, or possible service failure.

7.2.3.27.2 Conformance requirement

In the UE, this timer shall be started when the successful or unsuccessful transmission of the last STATUS PDU of an acknowledgement status report is indicated by lower layer

[...]

When a status report is triggered the Receiver shall:

- if transmission of status reports is not prohibited by any of the functions "STATUS prohibit" or "EPC mechanism":
 - assemble and transmit the status report to the Sender, as specified in subclauses TS 25.322 11.5.2.2 and 11.5.2.3.
 - otherwise (if the status report is prohibited by at least one of the functions "STATUS prohibit" or "EPC mechanism"):
 - [...]
- if ACK, LIST, BITMAP, or RLIST SUFIs are required in the status report:
- delay sending these SUFIs until the prohibit function terminates.

[...]

Upon expiry of the timer Timer_Status_Prohibit [...], the Receiver shall:

- if at least one status report was triggered during the time the transmission of a status reports was prohibited that could not be transmitted due to prohibition; and
- if transmission of a status reports is no longer prohibited by any of the functions "STATUS prohibit" or "EPC mechanism":
 - transmit one status report to the Sender, using the procedure described in subclause TS 25.322 11.5.2.3.

Reference

TS 25.322 clause 9.7.2.

7.2.3.27.3 Test purpose

1. To verify that a status report is not transmitted while the Timer_Status_Prohibit timer is active.
2. To verify that only one status report is sent on the expiry of the Timer_Status_Prohibit timer if several triggers occur while it is active.

7.2.3.27.4 Method of test

Initial conditions

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 AM 7-bit "Length Indicator" tests in clause 7.2.3.1.

The following RLC parameter values are used in place of the values in clause 7.2.3.1:

Downlink RLC	
Timer_Status_Prohibit	500
Timer_STATUS_periodic	200

These settings apply to both the uplink and downlink DTCH.

Test procedure

Let T_{pro} be the value of the Timer_Status_Prohibit timer, and T_{per} be the value of the Timer_Status_Periodic timer.

- The SS starts transmission of at least $\text{ceil}(2 * T_{pro} / TTI) + \text{ceil}(T_{per}/TTI)$ SDUs of size $AM_7_PayloadSize - 1$ bytes.
- Whilst transmitting, the SS monitors the uplink for a STATUS PDU and notes the time. This time will be recorded as T_1 .
- The SS sets the P bit in one of the next $\text{floor}(T_{pro}/TTI)$ PDUs transmitted on the downlink.
- The SS waits to receive a second STATUS PDU and notes the time. This time will be recorded as T_2 .
- The SS waits for at least Timer_Status_Prohibit to receive any last STATUS PDU from the UE.
- The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	...	SS continues to transmit RLC SDUs
3		←	DOWNLINK RLC PDU	SDU m
4		→	STATUS PDU	Note T_1
5		←	DOWNLINK RLC PDU	Poll
6		←	...	SS continues to transmit RLC PDUs
7		←	DOWNLINK RLC PDU	SDU m + $\text{ceil}(T_{pro} / TTI)$
8		→	STATUS PDU Void	<u>Note T_2</u>
9			RB RELEASE Void	<u>Optional step</u>
10		→	STATUS PDU	SS may receive STATUS PDUs
11			RB RELEASE	Optional Step

NOTE 1: The Expected Sequence shown is informative.
The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.
Information such as SDU, PDU or Sequence numbers given in the comments column shall be considered informative only, for test case development purposes.

7.2.3.27.5 Test requirements

- The measured time $T_2 - T_1$ shall be 500 ms.

2. Only one STATUS PDU shall be received in step 8 after $(T1 + T_{pro})$ and before $(T1 + 2 * T_{pro})$.

<< END OF MODIFIED SECTION >>

CHANGE REQUEST

⌘ **34.123-1 CR 825** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ System Information Block type 1 modification for FACH to DCH:T312 set to 2 seconds in connected mode		
Source:	⌘ Racal Instrument Wireless Group, an Aeroflex Company and MCC 160		
Work item code:	⌘ TEI	Date:	⌘ 10/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ The timing allowed to SS to reconfigure from FACH to DCH is very tight. According to 25.331, clause 8.5.4, UE shall wait during T312 for layer 1 to indicate "in sync" indications. T312 is set in SIB1 and it is declared as INTEGER(0..15) in second; it is set to 1s (default value) in 34.108. In addition, after sending the reconfiguration message, a delay of 500ms is needed to give time to SS to send the message through layers. This means that to effectively reconfigure SS from FACH to DCH; SS is having only 500ms although a real network would have 1s; because a real network could start configuring DPCH just after sending RADIO BEARER SETUP what can not be done in TTCN. Therefore, T312 shall be set to 2 seconds in the test cases performing reconfiguration from FACH to DCH.
Summary of change:	⌘ In the test cases performing a reconfiguration from FACH to DCH: T312 in SYSTEM INFORMATION BLOCK TYPE 1 is set to 2 at the beginning of the test.
Consequences if not approved:	⌘ Difficult to pass test cases successfully.

Clauses affected:	⌘ 8.2.1.10, 8.2.1.14, 8.2.1.18, 8.2.1.23, 8.2.2.10, 8.2.2.31, 8.2.2.37, 8.2.3.9, 8.2.3.17, 8.2.4.10, 8.2.4.19, 8.2.4.25, 8.2.6.9, 8.2.6.18, 8.2.6.33, 8.4.1.3, 8.4.1.7, 8.4.1.8, 8.4.1.18, 8.4.1.19							
Other specs	⌘	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other core specifications	⌘
Y	N							
<input checked="" type="checkbox"/>	<input type="checkbox"/>							

affected:

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications
<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications

34.123-3

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.

8.2.1.10 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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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.

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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 BEARER 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 9 of TS 34.108, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
- 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.

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-DCCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108.

Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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.

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

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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 - 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 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)	TDD Same UARFCN as used for cell 6
Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	As used for cell 6

8.2.1.23.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCCH using AM RLC in cell 6.

After step 4 the UE shall be in CELL_DCH state of cell 6.

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.8.2.2.10.4Method 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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE~~

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 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	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	400
- Timer_RST	4
- Max_RST	
- 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	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	400
- Timer_RST	4
- Max_RST	
- 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.

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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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 - 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 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 - 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

8.2.2.31.5 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.

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

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.

...

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> 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":
 - 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".
- 1> if the IE "HS-DSCH Timeslot Configuration" is included:
 - 2> store the received configuration.

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.

Reference

3GPP TS 25.331 clauses 8.2.2.3, 8.6.6.32

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_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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 RECONFIGURATION	Stop of HS-DSCH reception and transit to CELL_FACH state,
2		→	RADIO BEARER RECONFIGURATION COMPLETE	
3		←	RADIO BEARER RECONFIGURATION	Start of HS-DSCH reception and transit to CELL_DCH state
4		→	RADIO BEARER RECONFIGURATION COMPLETE	
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 9 of TS 34.108, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

RADIO BEARER RECONFIGURATION (Step 1)

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	Not Present
- RB stop/continue	Not Present
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 3)

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	Not Present
- RB stop/continue	Not Present
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 1, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 3, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

|

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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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.

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-DCCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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:

<u>Information Element</u>	<u>Value/remark</u>
RRC transaction identifier	0
Activation Time Info	Not present
- Uplink DPCH Info	
- Scrambling code number	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.

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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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.

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

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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.

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.

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 8.2.4.25. 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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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)	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

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.

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

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T312</u>	<u>2</u>

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.

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

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>----- T312</u>	<u>2</u>

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.

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.

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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 subtype 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 <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - 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.

8.4.1.3 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_FACH state (FDD)

8.4.1.3.1 Definition

8.4.1.3.2 Conformance requirement

Upon transition from idle mode to CELL_FACH state, the UE shall:

- 1> begin or continue monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11).

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.

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);
 - 2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11):
 - 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 8.4.1.9.1, 8.4.1.7.1, 8.4.2.2.

8.4.1.3.3 Test Purpose

1. To confirm that the UE begins or continues to monitor cells listed in IE "intra-frequency cell info list" of System Information Block type 11 or 12 messages after it has entered CELL_FACH state from idle mode.
2. To confirm that the UE applies the reporting criteria stated in "intra-frequency measurement reporting criteria" IE in System Information Block Type 11 or 12 in a subsequent transition to CELL_DCH state.
3. 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.

8.4.1.3.4 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: "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).

Test Procedure

Table 8.4.1.3-1 illustrates the downlink power to be applied for the 2 cells in this test case.

Table 8.4.1.3-1

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Ch. 1	Ch. 1
CPICH Ec	dBm/ 3.84 MHz	-60	-67

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

The UE is initially in idle mode and camps on cell 1. The System Information Block type 11 are modified compared to the default settings. In the System Information Block type 11 messages, reporting of CPICH RSCP is also required for intra-frequency reporting when transmitting RACH messages 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 procedure P6. Next SS and UE shall execute procedure P10. Then SS and UE shall execute procedure P14. SS starts timer T305 and waits until timer T305 expires, the UE shall send a CELL UPDATE message on the CCCH which includes the measured value of cell 1's CPICH RSCP in IE "Measured results on RACH". SS then replies with CELL UPDATE CONFIRM message on the downlink DCCH, without changing the physical channel resources.

SS transmits PHYSICAL CHANNEL RECONFIGURATION message, and allocates dedicated physical channels to the UE. The UE shall transit to CELL_DCH state and then send a MEASUREMENT REPORT message, correctly stating the measurement identity. The measurement identity indicated shall match the value that was previously broadcast on System Information Block type 11 messages when the UE was still in idle mode. The IE "Measured results" in the MEASUREMENT REPORT messages shall contain measured values of cell 2's CPICH RSCP.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 1, System Information Block type 11	The UE is in idle mode and camps onto cell 1. System Information Block type 1 and 11 to be transmitted are different from the default settings (see specific message contents)
2		↔	SS executes procedure P6 (clause 7.4.2.2.2) specified in TS 34.108.	SS prompts the test operator to make an outgoing call.
3		↔	SS executes procedure P10 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P14 (clause 7.4.2.6.2) specified in TS 34.108.	

5		Void	
6			SS monitors the uplink DCCH to confirm that no MEASUREMENT REPORT messages are detected. SS waits for 5 minutes (for the expiry of T305 timer).
7	→	CELL UPDATE	This message shall contain IE "Measured results on RACH" reporting the measured CPICH RSCP for cell 1.
8	←	CELL UPDATE CONFIRM	SS does not change the physical channel configurations.
9	←	PHYSICAL CHANNEL RECONFIGURATION	SS assigns dedicated physical resources.
10	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
11	→	MEASUREMENT REPORT	UE shall begin to report cell 2's CPICH RSCP value periodically at 16 seconds interval. The measurement identity shall match the one that is broadcast for use in CELL_DCH in SIB11 in step 1.

Specific Message Content

System Information Block type 1 (Step 1)

Use the same System Information Block Type 1 message as found in clause 6.1.0b of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
UE Timers and constants in connected mode - T305	5 minutes.
<u>- T312</u>	<u>2</u>

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	5
- Intra-frequency measurement identity	5
- Intra-frequency cell info list	Not Present
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	1
- Intra-frequency cell id	1
- Cell info	Not Present
- Cell individual offset	Not Present
- Reference time difference to cell	Not present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1.4 of TS 34.108
- 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	Not Present
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1.4 of TS 34.108
- 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 (Default is 0 dB)
- Qoffset1 _{s,n}	Not Present
- Qoffset2 _{s,n}	Not Present
- 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 reporting quantity for RACH reporting indicator	No report
- 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
- 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	TRUE
- 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
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Event trigger
- Periodic Reporting/Event Trigger Reporting Mode	Event trigger
- CHOICE report criteria	Intra-frequency measurement reporting criteria

<ul style="list-style-type: none"> - Parameters required for each event - Intra-frequency event identity - Triggering condition 1 - Triggering condition 2 - Reporting Range Constant - Cells forbidden to affect reporting range - W - Hysteresis - Threshold used frequency - Reporting deactivation threshold - Replacement activation threshold - Time to trigger - Amount of reporting - Reporting interval - Reporting Cell Status - CHOICE reported cell 	<ul style="list-style-type: none"> 1a Not Present Monitored set cells 14 dB Not Present 0.0 1.0 dB Not Present 0 Not Present 60 ms Infinity 16 seconds
<ul style="list-style-type: none"> - Maximum number of reported cells 	<ul style="list-style-type: none"> Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency 2

CELL UPDATE (Step 7)

Information Element	Value/remark
U-RNTI	Check to see if set to same U-RNTI value assigned in the execution of procedure P6.
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 set to 'Periodical cell update'
Failure cause	Check to see if this IE is absent
Measured results on RACH	
- Measurement result for current cell	Check to see if set to 'CPICH RSCP'
- CHOICE measurement quantity	Checked to see if set to within an acceptable range.
- CPICH RSCP	Checked to see if this IE is absent.
- Measurement results for monitored cells	

PHYSICAL CHANNEL RECONFIGURATION (Step 9)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Packet to CELL_DCH from CELL_FACH".

MEASUREMENT REPORT (Step 11)

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 measurement results	
- 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 present
- CPICH RSCP	Check to see if this IE is absent
- 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 present and includes IE COUNT-C-SFN frame difference
- Primary CPICH Info	Check to see if it's the same code for cell 2
- Primary Scrambling Code	Check to see if this IE is absent
- 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	
- CHOICE event result	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 scrambling code of cell 2

8.4.1.3.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages on the uplink DCCH.

After step 6 the UE shall initiate cell update procedure by transmitting CELL UPDATE message on CCCH. In this message, IE "cell update cause" shall be set to "periodic cell update". It shall include IE "measured results on RACH", containing the measurement value for cell 1's CPICH RSCP.

After step 10 the UE shall transmit MEASUREMENT REPORT messages at 16 seconds interval. In these messages, cell 2's CPICH RSCP value shall be reported in IE "Measured results". The IE "measurement identity" in this message shall match the IE "Intra-frequency measurement identity" found in System Information Block type 11 messages transmitted in step 1. The MEASUREMENT REPORT messages shall also contain IE "Event results", indicating that intra-frequency event "1a" has triggered in the UE.

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 transitioned 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.

Reference

3GPP TS 25.331, clause 8.4.1.3, 8.4.1.6a and 8.4.1.7.1

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.

- 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	-122	-122	-70	-60	-60	-75	-75	-60

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 only measurement readings for cell 3 's CPICH RSCP are report 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, instead of the ones that are broadcast in SIB12 (step 14f).

Following the reception of the MEASUREMENT REPORT message, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12 (step 15). Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH (step 16). 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.
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				
12		←	Void	
13		→	Void	
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.

Step	Direction		Message	Comment
	UE	SS		
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 CONTROL	Terminate all the intra-frequency measurement and reporting activities related to "measurement identity" = 12.
16				SS waits and verifies that UE stop transmitting MEASUREMENT REPORT messages.
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".
18		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates common physical channels.
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 reconfigures the downlink transmission power settings for cells 1 to 3 according to column "T1" in table 8.4.1.7. SS sends SIB11 and SIB12 with specific values to Cell2.
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	

Step	Direction		Message	Comment
	UE	SS		
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 9 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u> - T312</u>	<u>2</u>

Master Information Block (Step 1)

Information Element	Value/Remarks
MIB Value Tag	3

System Information Block type 11 for cell 1 (Step 1)

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	Not present
- 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	Report cells within monitored set cells on used frequency
- CHOICE reported cells	1
- Maximum number of reported cells	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 CHANGE INDICATION (Step 1a)

Information Element	Value/Remarks
BCCH modification info	3
- MIB Value Tag	Not Present
- 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 and 9c)

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 DPCH compressed mode status info	1 Not Present
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MEASUREMENT REPORT (Step 6)

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	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 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	Check to see if this IE is absent
- Cell Identity	Check to see if this IE is absent
- Cell synchronisation information	
- 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
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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 15)

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)

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
- 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 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/No 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/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 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 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
- 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
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

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	FALSE
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	Not present
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Intra-frequency measurement criteria
- CHOICE report criteria	1e
- Parameters required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	Not Present
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	FDD
- CHOICE Mode	Set to the same scrambling code for cell 3
- Primary CPICH Info	Not Present
- Primary Scrambling Code	0 dB
- W	Not Present
- Hysteresis	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	-90 dBm
- Threshold used frequency	0
- Time to Trigger	Not Present
- Amount of reporting	Not Present
- Reporting interval	Report cells within monitored set cells on used frequency
- Reporting cell status	1
- CHOICE reported cells	Not Present
- Maximum number of reported cells	
DPCH compressed mode status info	

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 15 the UE shall stop measurement activities pertaining to periodic reporting of cell 2's CPICH RSCP, no MEASUREMENT REPORT messages shall be detectable by the SS on the uplink DCCH.

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'.

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:

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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:

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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		
1				(Valid for both the PS and CS cases) The initial state of UE is in CELL_DCH state of cell 1.

Step	Direction		Message	Comment
	UE	SS		
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 compressed 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.
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.

Step	Direction		Message	Comment
	UE	SS		
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 compressed 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 MEASUREMENT 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.
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 of TS 34.108, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
- 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	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	Inter-frequency measurement
CHOICE measurement type	No inter-frequency cells removed
- Inter-frequency cell info list	5
- CHOICE inter-frequency cell removal	UARFCN of the uplink frequency for cell 5
- New inter-frequency info list	UARFCN of the downlink frequency for cell 5
- Inter-frequency cell id	0 dB
- Frequency info	Not Present
- UARFCN uplink (Nu)	FALSE
- UARFCN downlink (Nd)	FDD
- Cell info	Set to same code as used for cell 5
- Cell individual offset	Not Present
- Reference time difference to cell	FALSE
- Read SFN Indicator	FDD
- CHOICE Mode	Set to same code as used for cell 5
- Primary CPICH Info	Not Present
- Primary Scrambling Code	FALSE
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- Cell synchronisation information reporting	FALSE
indicator	
- 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 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	
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 Annex A 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 Annex A, 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 <ul style="list-style-type: none"> - Downlink DPCH info common for all RL - CHOICE mode - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP - CHOICE UL/DL Mode - Downlink compressed mode method - Uplink compressed mode method - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIRAfter2 - N identify abort - T Reconfirm abort - TX Diversity Mode - SSDT information - Default DPCH Offset Value 	Not Present FDD 1 Activate (Current CFN+(256 – TTI/10msec)) mod 256 FDD Measurement Infinity 4 7 Not Present undefined 3 Not Present Mode 0 Mode 0 UL and DL UL only or DL only depending on UE capability SF/2 (or not sent, depending on the UE capability) SF/2 (or not sent, depending on UE capability) B 2.0 1.0 Not Present Not Present Not Present Not Present None Not Present 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 <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	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

<ul style="list-style-type: none"> - Code number - Scrambling code change - TPC combination index - SSDT cell identity - Closed loop timing adjustment mode 	Parameter Set Same as the code currently allocated to the UE Code change 0 Not present Not present
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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	Check to see if it 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 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 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
- 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	$(256 + \text{CFN} - (\text{CFN} \bmod 8 + 8)) \bmod 256$
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 <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	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 <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	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 <i>channel requirement</i>	Not Present
CHOICE <i>mode</i>	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.

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-DCCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108

Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.

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 9 of TS 34.108, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
- 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	Not used
- Use of HCS	CPICH RSCP
- Cell selection and reselection quality measure	Not Present
- Intra-frequency measurement system information	Remove no intra-frequency cells
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	0 dB
- CHOICE intra-frequency cell removal	Not Present
- New intra-frequency cells	TRUE
- Intra-frequency cell id	FDD
- Cell info	Set to same code as used for cell 1
- Cell individual offset	Not Present
- Reference time difference to cell	FALSE
- Read SFN indicator	Not Present
- CHOICE mode	FDD
- Primary CPICH info	Set to same code as used for cell 1
- Primary scrambling code	Not Present
- Primary CPICH Tx power	FALSE
- TX Diversity indicator	Not Present
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity for RACH	Not Present
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	5
- Traffic volume measurement ID	Not Present
- Traffic volume measurement object list	RLC Buffer Payload
- Traffic volume measurement quantity	True
- Traffic volume reporting quantity	False
- RB buffer payload	False
- RB buffer payload average	Not Present
- RB buffer payload variance	All states
- Traffic volume measurement reporting criteria	Acknowledged Mode
- Measurement validity	Periodical
- Measurement reporting mode	Periodical reporting criteria
- Measurement report transfer mode	Infinity
- Periodical or event trigger	8 seconds
- Report criteria system Information	
- Reporting amount	
- Reporting interval	

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	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	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 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.

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 perform 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

~~Before the test starts, SYSTEM INFORMATION BLOCK TYPE 1 message is modified (see specific message contents) and this modification is notified to the UE.~~

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 Measurement Command - CHOICE measurement type - Measurement validity	2 Setup Traffic Volume Measurement 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 Measurement Command Measurement reporting mode Additional measurement list DPCH compressed mode status	2 Release Not Present Not Present 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 Measurement Command - CHOICE measurement type - Measurement validity	3 Setup Traffic Volume Measurement 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

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-T WG1 Meeting #23
 Beijing, China, May 10th-14th, 2004

Tdoc # T1-040520

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 756 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ New HSDPA MAC-hs reset test case		
Source:	⌘ Ericsson		
Work item code:	⌘ HSDPA Date: ⌘ 2004-04-20		
Category:	⌘ F Release: ⌘ REL-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%;"> Use <u>one</u> 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) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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)
F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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 test case for MAC-hs reset
Summary of change:	⌘ Following new sub-section has been created: - 7.1.5.5 MAC-hs reset
Consequences if not approved:	⌘ Lack of test coverage for HSDPA

Clauses affected:	⌘ 7.1.5.5 (new)									
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;">X</td> <td style="padding: 2px 5px;"> </td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘
	Y	N								
		X								
X										
	X									
34.123-2										
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.

7.1.5.5 MAC-hs reset

7.1.5.3.1 Definition and applicability

All UEs which support HS-PDSCH.

7.1.5.3.2 Conformance requirement

If a reset of the MAC-hs entity is requested by upper layers, the UE shall:

- flush soft buffer for all configured HARQ processes;
- stop all active re-ordering release timer (T1) and set all timer T1 to their initial value;
- start TSN with value 0 for the next transmission on every configured HARQ process;
- initialise the variables RcvWindow UpperEdge and next_expected_TSN to their initial values;
- disassemble all MAC-hs PDUs in the re-ordering buffer and deliver all MAC-d PDUs to the MAC-d entity;
- flush the re-ordering buffer.

and then:

- indicate to all AM RLC entities mapped on HS-DSCH to generate a status report.

[...]

Reference(s)

TS 25.321 clause 11.6.2.5

7.1.5.3.3 Test purpose

1. To confirm that the UE flushes the reordering buffer and delivers all MAC-d PDUs in the buffer to higher layers upon reset.
2. To confirm that the UE initializes the TSN and next_expected_TSN to their initial values.
3. To confirm that the UE sends an RLC status report after the reset.

7.1.5.3.4 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). The following parameters are specific for this test case:

<u>Parameter</u>	<u>Value</u>
<u>MAC-hs receiver window size</u>	<u>32</u>
<u>MAC-hs reordering timer T1</u>	<u>400 ms</u>

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 39 octets.

Test procedure

In this test procedure each MAC-hs PDU contains one RLC PDU carrying one SDU of size 39 octets and one length indicator indicating the end of the SDU.

- a) The SS transmits a MAC-hs PDU with Transmission Sequence Number (TSN) = 0 containing an RLC PDU with SN=0
- b) The SS checks that the RLC PDU with SN=0 is looped back
- b) The SS transmits 2 MAC-hs PDUs with TSN = 2,3 containing the RLC PDUs with SN=1,2
- c) The SS initiates a MAC-hs reset by transmitting a PHYSICAL CHANNEL RECONFIGURATION message
- d) The SS checks that the RLC PDUs with SN=1,2 are looped back
- e) The SS checks that an RLC status report is transmitted by the UE
- d) The SS transmits a MAC-hs PDU with TSN = 0 containing an RLC PDU with SN=3
- e) The SS checks that the RLC PDU with SN=3 is looped back

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	MAC-hs PDU with TSN = 0, containing RLC PDU with SN = 0	
2		→	RLC PDU with SN 0	
3		←	MAC-hs PDU with TSN = 2, containing RLC PDU with SN = 1	
4		←	MAC-hs PDU with TSN = 3, containing RLC PDU with SN = 2	
5		←	SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to trigger a MAC-hs reset	Note: Time Ta
6		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7		→	RLC PDUs with SN 1,2	The RLC PDUs are delivered directly after the MAC-hs reset i.e. before T1 expires. Note: time Tb
8		→	RLC status report	
9		←	MAC-hs PDU with TSN = 0, containing RLC PDU with SN = 3	
10		→	RLC PDUs with SN 3	

NOTE : Steps 6-8 may occur in different order.

Specific Message Contents

PHYSICAL 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
Downlink information common for all radio links - MAC-hs reset indicator	TRUE

7.1.5.1.5 Test requirements

1. After step 1, the RLC PDU with SN = 0 shall be looped back
2. After step 5, the RLC PDUs with SN = 1,2 shall be looped back
3. The time $T_b - T_a$ shall be less than $T1/2$
3. After step 5 an RLC status report shall be received
4. After step 5, the RLC PDU with SN=3 shall be looped back

CHANGE REQUEST

⌘ **34.123-1 CR 758** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 radio bearer test cases		
Source:	⌘ Ericsson		
Work item code:	⌘ HSDPA	Date:	⌘ 2004-04-16
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> 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 FDD HSDPA reference radio bearer configurations was by mistake put into the TDD section of 34.108 by a CR at T1#22. A CR to 34.108 in T1-040522 corrects this and the corresponding change is required for the FDD HSDPA radio bearer test cases in 34.123-1. 2. Update of RLC window sizes to be more representative to live networks and fit into the UE capability for the different UE categories. 3. The generic test procedure need to configure the MAC-hs and MAC-d parameters for each sub-test. The current procedure does not reflect this.
Summary of change:	⌘	1. References to FDD HSDPA reference radio bearer combinations in 34.108 are changed from 6.10.3.4.6 to 6.10.2.4.5. 2. RLC receiver and transmitter window sizes have been updated for test cases 14.6.1 and 14.6.2. 3. 14.1.3.2.2: Step q) and r) in test procedure and step 22 in expected sequence changed to reflect that the radio bearer need to be established for every sub-test.
Consequences if not approved:	⌘	Incorrect references to 34.108.

Clauses affected:	⌘	14.1.3.2.2, 14.6.1 and 14.6.2									
Other specs Affected:	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N		X		X		X	⌘
Y	N										
	X										
	X										
	X										

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 first modified section>

14.1.3 General information interoperability radio bearer tests for HS-DSCH

14.1.3.1 Radio bearer test parameters for UE categories

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]
Category 1	5	3	7298	19200	QPSK, 16QAM	6	50
Category 2	5	3	7298	28800	QPSK, 16QAM	6	50
Category 3	5	2	7298	28800	QPSK, 16QAM	6	50
Category 4	5	2	7298	38400	QPSK, 16QAM	6	50
Category 5	5	1	7298	57600	QPSK, 16QAM	6	50
Category 6	5	1	7298	67200	QPSK, 16QAM	6	50
Category 7	10	1	14411	115200	QPSK, 16QAM	8	100
Category 8	10	1	14411	134400	QPSK, 16QAM	8	100
Category 9	15	1	20251	172800	QPSK, 16QAM	8	150
Category 10	15	1	27952	172800	QPSK, 16QAM	8	150
Category 11	5	2	3630	14400	QPSK	6	50
Category 12	5	1	3630	28800	QPSK	6	50

14.1.3.2 Generic test procedure for single HS-DSCH radio bearer configurations

This procedure is used to test single HS-DSCH radio bearer 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)
k_i	TFRI signalled on the HS-SCCH value
$K_{0,I}$	See table 14.1.3.2.1
k_t	Transport Block Size index ($=k_i + k_{0,I}$), see table 14.6.1.2.2
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 14.1.3.2.1: Values of $k_{0,i}$ for different numbers of channelization codes and modulation schemes

Combination <i>I</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 14.1.3.2.2: 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
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		

14.1.3.2.1 Initial conditions

UE in idle mode

14.1.3.2.2 Test procedure

- 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 sets $M = \text{QPSK}$.
- e) The SS sets $N_{\text{codes}} = 1$.
- f) 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} .
- g) The SS sets the test parameter k_i to 0.
- h) The SS calculates the index value $k_t (=k_i + k_{0,t})$ and lockup the transport block size, TB_{size} , for the actual k_t in table 14.1.3.2.2

If TB_{size} is bigger than "Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI" for the actual UE category then SS continues with step e).

- i) The SS calculates the maximum number of MAC-d PDUs that fits into the MAC-hs transport block:

$$N_{\text{PDUs}} = \text{ceil}((TB_{\text{size}} - \text{MAC-hs_header_size}) / \text{MAC-d_PDU_size})$$

If N_{PDUs} is bigger than 70 then SS continues with step e).

- j) The SS sends a MAC-hs PDU containing N_{PDUs} MAC-d PDUs, where each MAC-d PDU contains a RLC SDU of size DL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit). See note 3.
- k) For each HARQ processes under test the SS checks that the UE HARQ buffer is sufficient to store the transmission, and if so a MAC-hs PDU of size TB_{size} is transmitted with $TFRI = k_{0,i}$. Data is transmitted every Nth TTI where N is given by the minimum inter-TTI interval.
- l) The SS checks that the content of the UE returned 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.
- m) The SS increments the test parameter k_i by 1. If k_i is less than 63 then SS repeats steps h) to m).
- n) The SS increments the test parameter N_Code by 1. If N_code is less or equal to the “Maximum number of HS-DSCH codes received” for the actual UE category under test then the SS repeats test steps f) to n).
- o) If $Modulation = QPSK$ and UE Category is 1 to 10 then the SS sets the test parameter $Modulation$ to 16QAM and repeats steps e) to o).
- p) The SS opens the UE test loop.
- q) The SS release the radio bearer. ~~Steps b) to p) are repeated for all sub-tests~~
- r) Steps a) to q) are repeated for all sub-tests. ~~The SS may optionally release the radio bearer.~~
- s) 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.

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 must be omitted.
12	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
13	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFRCs", 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
16		SS		The SS calculates test data for the first TFRC, N_{codes} and M .
17	<--		DOWNLINK MAC-hs PDU (HARQ process 1) DOWNLINK MAC-hs PDU (HARQ process N)	Send test data for the number of HARQ processes to be tested
18	-->		UPLINK RLC SDU UPLINK RLC SDU	The number of returned RLC SDUs depends on the TFRC and the number of HARQ processed to be tested.
19		SS		The SS calculates test data for next TFRC and repeat steps 18 to 19 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 Optional step
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.

<End of modified section>

<Start of next modified section>

14.6 Combinations on DPCH and HS-PDSCH

14.6.1 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

14.6.1.1 Conformance requirement

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 9.2.3.1 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 9.2.3.1: 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_i (as per the definition in subclause 9.2.3.1) and the HS-DSCH Transport Block Size ($L(k_i)$):

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
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, 9.2.3.1 and Annex A

14.6.1.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause [6.10.2.4.5.16-10.3.4.6.1](#).

14.6.1.3 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 is run for each sub-test.

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	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)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCIs (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	128	336	UL_TFC1	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312
	2	2	512	128					
	3	3	512	128					
	4	3	512	128					
	5	6	512	256					
	6	6	512	256					
	7	6	1536 512	512					
	8	6	1536 512	512					
	9	6	2047 512	512					
	10	6	2047 512	512					
	11	3	1024 512	128					
	12	6	1024 512	128					
2	1	2	256	128	656	UL_TFC2	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632
	2	2	256	128					
	3	3	256	128					
	4	3	256	128					
	5	6	256	256 128					
	6	6	256	256 128					
	7	6	512 256	512 256					
	8	6	512 256	512 256					
	9	6	1024 256	512 256					
	10	6	1024 512	1024 512					
	11	3	512 256	128					
	12	6	512 256	128					
3	1	8	512	256	336	UL_TFC3	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 312
	2	8	512	256					
	3	8	512	256					
	4	8	512	256					
	5	8	512	256					
	6	8	512	256					
	7	8	1536 512	512					
	8	8	1536 512	512					
	9	8	2047 512	512					
	10	8	2047 1024	1024					
	11	8	1024 512	128					
	12	8	1024 512	128					
4	1	8	256	256 128	656	UL_TFC4	UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 632
	2	8	256	256 128					
	3	8	256	256 128					
	4	8	256	256 128					
	5	8	256	256 128					
	6	8	256	256 128					
	7	8	512 256	512 256					
	8	8	512 256	512 256					
	9	8	1024 256	512 256					
	10	8	1024 512	1024 512					
	11	8	512 256	128					
	12	8	512 256	128					

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: To be able to verify all data sent in downlink the UL RLC SDU size is set to DL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit).

14.6.1.4 Test requirements

See 14.1.3.2 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF1 (2x336).
 - for sub-test 3: TF1 (3x336).
 - for sub-test 4: TF1 (4x336).
3. At step 18 the UE shall return RLC SDUs with correct content. See note.

NOTE The number of returned RLC SDUs depends on the TFRC.

14.6.2 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

14.6.2.1 Conformance requirement

See 14.6.1.1.

14.6.2.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause [6.10.2.4.5.26-10.3.4.6.2](#).

14.6.2.3 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 is run for each sub-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)

Sub-tests:

Sub-test	UE Category	Number of HARQ processes	RLC Receiving window size (note 1)	RLC Transmission window size (note 1)	MAC-d PDU size (bits)	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCS (note 2)	UL RLC SDU size (bits) (note 3)
1	1	2	512	256	336	UL_TFC1	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 312
	2	2	512	256					
	3	3	512	256					
	4	3	512	256					
	5	6	512	256					
	6	6	512	256					
	7	6	1536 512	512					
	8	6	1536 512	512					
	9	6	2047 512	512					
	10	6	2047 512	512					
	11	3	512	256					
	12	6	512	256					
2	1	2	256	256 128	656	UL_TFC2	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632
	2	2	256	256 128					
	3	3	256	256 128					
	4	3	256	256 128					
	5	6	256	256 128					
	6	6	256	256 128					
	7	6	512 256	512 256					
	8	6	512 256	512 256					
	9	6	1024 256	512 256					
	10	6	1024 512	1024 512					
	11	3	256	256 128					
	12	6	256	256 128					
3	1	8	512	256	336	UL_TFC3	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 312
	2	8	512	256					
	3	8	512	256					
	4	8	512	256					
	5	8	512	256					
	6	8	512	256					
	7	8	1536 512	512					
	8	8	1536 512	512					
	9	8	2047 512	512					
	10	8	2047 1024	1024					
	11	8	512	256					
	12	8	512	256					
4	1	8	256	256 128	656	UL_TFC4	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 632
	2	8	256	256 128					
	3	8	256	256 128					
	4	8	256	256 128					
	5	8	256	256 128					
	6	8	256	256 128					
	7	8	512 256	512 256					
	8	8	512 256	512 256					
	9	8	1024 256	512 256					
	10	8	1024 512	1024 512					
	11	8	256	256 128					
	12	8	256	256 128					
5	1	8	256	256 128	656	UL_TFC5	UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 632
	2	8	256	256 128					
	3	8	256	256 128					
	4	8	256	256 128					
	5	8	256	256 128					
	6	8	256	256 128					

	7	8	512 256	512 256					
	8	8	512 256	512 256					
	9	8	1024 256	512 256					
	10	8	1024 512	1024 512					
	11	8	256	256 128					
	12	8	256	256 128					

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 TFCs.

NOTE 3: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: To be able to verify all data sent in downlink the UL RLC SDU size is set to DL RLC payload size minus 8 bits (size of 7 bit length indicator and expansion bit).

14.6.2.4 Test requirements

See 14.1.3.2 for definition of step 12 and step 18.

1. At step 12 the UE shall send RADIO BEARER SETUP COMPLETE.
2. At step 18 the UE transmitted transport format shall be
 - for sub-test 1: TF1 (1x336).
 - for sub-test 2: TF1 (2x336).
 - for sub-test 3: TF1 (4x336).
 - for sub-test 4: TF1 (8x336).
 - for sub-test 4: TF1 (12x336).
3. At step 18 the UE shall return RLC SDUs with correct content. See note.

NOTE The number of returned RLC SDUs depends on the TFRC.

<End of modified section>

CHANGE REQUEST

⌘ **TS 34.123-1 CR 774** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 package 4 RRC test case 8.2.2.35		
Source:	⌘ Nokia, ETSI MCC160		
Work item code:	⌘ TEI	Date:	⌘ 15/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p><i>Use <u>one</u> of the following releases:</i></p> <p>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)</p>

Reason for change: ⌘	<ol style="list-style-type: none"> 1. Several editorial errors are present in the Expected Sequence and the Specific Message Contents. 2. The Radio Bearer Identity used for the second PS RB is not in line with 34.123-3. According to 34.123-3v352 table 43 (clause 8.2.4) the Radio Bearer Identity 21 is defined as a PS RB using UM RLC mode. But in the prose of test case 8.2.2.35 RB21 uses AM RLC mode. 3. At step 8 the Radio Bearer Reconfiguration from CELL_FACH to CELL_DCH includes the IE 'new C_RNTI'. But according to 25.331 clause 8.2.2.3 the C_RNTI should be deleted in the UE after transition to CELL_DCH state. Therefore it is useless to include the IE 'new C_RNTI' in this message.
Summary of change: ⌘	<ol style="list-style-type: none"> 1. Expected Sequence and Specific Message Contents updated. 2. Radio Bearer Identity 21 replaced by Radio Bearer Identity 22. 3. At Step 8, remove the IE 'new C_RNTI' from the Radio Bearer Reconfiguration message.
Consequences if not approved: ⌘	The prose will not be in line with the current TTCN implementation.

Clauses affected: ⌘	8.2.2.35		
<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> </table>	Y	N	
Y	N		

Other specs affected:	⌘	<input type="checkbox"/>	<input type="checkbox"/>	Other core specifications	⌘	<input type="text"/>
		<input type="checkbox"/>	<input type="checkbox"/>	Test specifications		<input type="text"/>
		<input type="checkbox"/>	<input type="checkbox"/>	O&M Specifications		<input type="text"/>
Other comments:	⌘	<input type="text"/>				

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.

8.2.2.35 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.

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/ URA_PCH. RB reconfiguration procedure is used to: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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

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	24 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	24 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	24 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
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	
- 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	(AM DCCH for NAS_DT High priority)
- RB identity	24 <u>22</u>
- 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
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	
- 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	(AM DCCH for NAS_DT High priority)
- RB identity	24 <u>22</u>
- 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 ~~RECONFIGURATION~~ RELEASE message in this test case are identical the message sub-type indicated by "~~Contents of RADIO BEARER RELEASE message: AM or UM~~ 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	21 <u>22</u>

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.

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 775 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 package 4 RRC test case 8.2.3.29		
Source:	⌘ Nokia, ETSI MCC160		
Work item code:	⌘ TEI	Date:	⌘ 15/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Editorial change: Conformance requirement incorrect.
Summary of change:	⌘ Conformance requirement updated.
Consequences if not approved:	⌘ Discrepancy between 34.123-1 and 25.331.

Clauses affected:	⌘ 8.2.3.29								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N						
Y	N								
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.

8.2.3.29 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Associated with signalling connection release during multi call for PS and CS services

8.2.3.29.1 Definition

8.2.3.29.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RELEASE message:

it shall:

- 1> set the variable ORDERED_RECONFIGURATION to TRUE;
- 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 may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

...

- 1> enter a state according to TS25.331 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:
- 2> not change its current UL Physical channel configuration.
 - 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.

...

In case the procedure was triggered by reception of a ~~PHYSICAL CHANNEL RECONFIGURATION~~ [RADIO BEARER RELEASE](#) message, the UE shall:

- 1> transmit a RADIO BEARER RELEASE COMPLETE message as response message on the uplink DCCH using AM RLC.

....

If the IE "Signalling Connection release indication" is present in a message, the UE shall:

- 1> if all radio access bearers for the CN domain identified with the value of the IE "Signalling Connection release indication" would have been released in the variable ESTABLISHED_RABS after processing of the received message:
- 2> indicate release of the signalling connection identified with the value of the IE "Signalling Connection release indication" to the upper layers;

- 2> remove the signalling connection identified with the value of the IE "Signalling Connection release indication" from the variable ESTABLISHED_SIGNALLING_CONNECTIONS.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.1.3.

8.2.3.29.3 Test purpose

To confirm that the UE releases the existing radio access bearer and signalling connection according to a RADIO BEARER RELEASE message.

8.2.3.29.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in CELL_DCH state of cell 1. The UE initiates a session setup to establish a PS signalling connection for multi call. Then UE and SS enter to multi call state. The SS transmits a DISCONNECT message to release a CS domain signalling connection. After the CC procedure, SS transmit a RADIO BEARER RELEASE message which includes IE "Signalling Connection release indication" set to "CS domain" and new configuration for remained service to the UE. The UE shall configure the specified channel 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				The initial state of UE is in CELL_DCH state of cell 1.
2		→	INITIAL DIRECT TRANSFER (SERVICE REQUEST)	GMM (Session setup is initiated for multi call from UE side.)
3		←	DOWNLINK DIRECT TRANSFER (AUTHENTICATION AND CIPHERING REQUEST)	GMM
4		→	UPLINK DIRECT TRANSFER (AUTHENTICATION AND CIPHERING RESPONSE)	GMM
5		←	SECURITY MODE COMMAND	
6		→	SECURITY MODE COMPLETE	
7		→	UPLINK DIRECT TRANSFER (ACTIVATE PDP CONTEXT REQUEST)	SM
8		←	RADIO BEARER SETUP	
9		→	RADIO BEARER SETUP COMPLETE	
10		←	DOWNLINK DIRECT TRANSFER (ACTIVATE PDP CONTEXT ACCEPT)	SM
11		←	DOWNLINK DIRECT TRANSFER (DISCONNECT)	CC
12		→	UPLINK DIRECT TRANSFER (RELEASE)	CC
13		←	DOWNLINK DIRECT TRANSFER (RELEASE COMPLETE)	CC
14		←	RADIO BEARER RELEASE	Including IE "signalling connection release indication" set to "CS domain"
15		→	RADIO BEARER RELEASE COMPLETE	
16		↔	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 RELEASE (STEP 14)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type titled as "Non speech in CS" or "Speech in CS" as found in Clause 9 of TS 34.108, with the following exceptions

Information Element	Value/remark
Signalling Connection release indication - CN domain identity	CS domain

8.2.3.29.5 Test requirement

After step 14 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 776 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 package 2 RRC test case 8.3.1.22		
Source:	⌘ ETSI MCC160 and Nokia		
Work item code:	⌘ TEI	Date:	⌘ 19/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ <ul style="list-style-type: none"> At steps 7, 8, 14 & 15 incorrect NAS message are specified. In a NMO1 network a UE in CS/PS mode of operation or PS mode of operation will use Routing Area Update messages. This test case is applicable to UE supporting PS service.
Summary of change:	⌘ <ul style="list-style-type: none"> Step 7: Routing Area Update Request message is received by the SS. Step 8: Routing Area Update Reject message is sent by the SS. Step 14: Routing Area Update Request message is received by the UE. Step 15: Routing Area Update Accept message is sent by the UE.
Consequences if not approved:	⌘ This test case will fail conformant UEs.

Clauses affected:	⌘ 8.3.1.22										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> <tr> <td style="width: 20px; height: 15px;"></td> <td style="width: 20px; height: 15px;"></td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N								
Y	N										
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.

8.3.1.22 Cell update: Restricted cell reselection to a cell belonging to forbidden LA list (Cell_FACH)

8.3.1.22.1 Definition

8.3.1.22.2 Conformance requirement

1. - Cell reselection:

- if none of the criteria for performing cell update with the causes specified above in the current clause is met; and
- if the UE is in CELL_FACH or CELL_PCH state; and
- if the UE performs cell re-selection or the variable C_RNTI is empty:
 - perform cell update using the cause "cell reselection".

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.
- The cell is not part of the list of "forbidden LAs for roaming"
- The cell selection criteria are fulfilled.

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.

8.3.1.22.3 Test purpose

1. To confirm that the UE executes a cell update procedure after a successful reselection of another UTRA cell with a LA identity that is not part of the list of LAs stored in the UE as "forbidden location areas for roaming".
2. To confirm that if the UE get a release message and is moved to idle mode, performs a ~~location~~ registration [update](#) where the LA list is updated and the UE again enters connected mode, that the UE refrains from selecting that same UTRA cell if that is part of the forbidden LA list.

NOTE: Test case in 8.3.1.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

NOTE: Test case in 8.1.3.2 is a test where normal RRC connection release on DCCH in CELL_FACH state is tested.

NOTE: Test case in 8.1.9 is a test where normal RRC connection request and location registration is tested.

8.3.1.22.4 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 8.3.1.22, while cell 2 is inactive.

UE: PS-DCCH+DTCH_FACH (state 6-11) in cell 1 as specified in clause 7.4 of TS 34.108.

UE: Shall have an empty list of LAs stored that are "forbidden location areas for roaming". ~~The UE shall be registered to CS through cell 1 with LA-ID 1.~~

[Related ICS/IXIT statements](#)

Support of PS service	Yes/No
---------------------------------------	------------------------

Test Procedure

Table 8.3.1.22

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
LA identity		LA-ID 1		LA-ID 2	
CPICH Ec (FDD)	dBm	-60	-66	Cell 2 is switched off	-60
P-CCPCH RSCP (TDD)	dBm	-62	-68	Cell 2 is switched off	-68

Table 8.3.1.22-1 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" is to be applied subsequently.

- a) At T1, verify that the UE reselects to cell 2 and sends a cell update.
- b) SS sends a RRC connection release message to the UE from cell2 on CCCH.
- c) The UE performs a ~~location registration~~ [routing area update](#) to cell 2 (RRC Connection request, setup, initial direct transfer, DL direct transfer (with LA forbidden for roaming), RRC connection release.)
- d) The UE reselects cell 1 again although this is not the best cell.
- e) The UE performs a ~~location registration~~ [routing area update](#) to cell 1 (RRC Connection request, setup, initial direct transfer, DL direct transfer (without LA forbidden for roaming)).
- f) Keep the UE in RRC Connected mode in CELL_FACH state.
- g) Make sure the UE refrains from reselecting cell2 and sends a cell update (or any other message) in cell2.

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		→	CELL UPDATE	At T1: Sent in Cell 2 The value "cell reselection" set in IE "Cell update cause".
2		←	RRC CONNECTION RELEASE	This message is sent on CCCH. The value "Normal event" is set in IE "Release cause"
3			Void	
4		→	RRC CONNECTION REQUEST	The value "Registration" is set in IE "Establishment cause"
5		←	RRC CONNECTION SETUP	Transits the UE to CELL_FACH state.
6		→	RRC CONNECTION SETUP COMPLETE	
7		→	INITIAL DIRECT TRANSFER	Includes MM message LOCATION UPDATING REQUEST , or GMM message ATTACH REQUEST <u>ROUTING AREA UPDATE REQUEST</u> .
8		←	DOWNLINK DIRECT TRANSFER	Includes MM message LOCATION UPDATING REJECT , or GMM message ATTACH ROUTING AREA UPDATE REJECT with reject cause "No Suitable Cells In Location Area"
9		←	RRC CONNECTION RELEASE	This message is sent on DCCH. The value "Normal event" is set in IE "Release cause"
10		→	RRC CONNECTION RELEASE COMPLETE	The value "Normal event" is set in IE "Release cause"
11		→	RRC CONNECTION REQUEST	Sent in Cell 1. The value "Registration" is set in IE "Establishment cause"
12		←	RRC CONNECTION SETUP	Transits the UE to CELL_FACH state.
13		→	RRC CONNECTION SETUP COMPLETE	
14		→	INITIAL DIRECT TRANSFER	Includes MM message LOCATION UPDATING REQUEST , or GMM message ATTACH REQUEST <u>ROUTING AREA UPDATE REQUEST</u> .
15		←	DOWNLINK DIRECT TRANSFER	Includes MM message LOCATION UPDATING ACCEPT , or GMM message ATTACH ACCEPT <u>ROUTING AREA UPDATE ACCEPT</u> .

Specific Message Contents

CELL UPDATE (Step 1)

The same message found in [Annex A-TS34.108 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 'cell reselection'

RRC CONNECTION RELEASE (Step 2, 9)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION RELEASE COMPLETE (Step 10)

Use the same message sub-type found in TS34.108 clause 9. Only the message type IE in this message will be checked.

RRC CONNECTION REQUEST (Step 4, 11)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION SETUP (Step 5, 12)

Use the same message sub-type found in TS34.108 clause 9.

RRC CONNECTION SETUP COMPLETE (Step 6, 13)

Use the same message sub-type found in TS34.108 clause 9.

INITIAL DIRECT TRANSFER (Step 7, 14)

Use the same message sub-type found in TS34.108 clause 9.

DOWNLINK DIRECT TRANSFER (Step 8, 15)

Use the same message sub-type found in TS34.108 clause 9.

8.3.1.22.5 Test requirement

In step 1, the UE shall send a CELL UPDATE in Cell 2 at T1 and attempt ~~Location~~ registration [update](#) in Cell 2.

After step 2, the UE shall transmit RRC CONNECTION REQUEST message.

After step 5, the UE shall transmit RRC CONNECTION SETUP COMPLETE message, followed by an INITIAL DIRECT TRANSFER message

Since the ~~location~~ registration [update](#) is rejected in Cell 2, UE shall transmit RRC CONNECTION RELEASE COMPLETE message after receiving RRC CONNECTION RELEASE message from SS. UE shall not send any more messages in Cell 2.

After step 9, the UE shall transmit RRC CONNECTION REQUEST message in cell 1.

After step 12, the UE shall transmit RRC CONNECTION SETUP COMPLETE message followed by INITIAL DIRECT TRANSFER message.

CHANGE REQUEST

⌘ **34.123-1 CR 777** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 8.2.4.1a		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2004-04-28
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	⌘ For test cases using the UE test loop function then the SS shall perform ACTIVATE RB TEST MODE command prior to establishing the radio bearer and activating the UE test loop function. When the UE test loop is activated in test case 8.2.4.1a the UE is in state PS-DCCH+DTCH_DCH (state 6-10 in 34.108 section 7.4). In this state the SS has already established the radio bearer (without performing activation of radio bearer test mode). Thus there is a need to change the initial signalling sequence such that ACTIVATE RB TEST MODE is performed before the UE test loop is activated.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Initial condition for the UE changed to UE being in state (PS-DCCH+DTCH_DCH_TEST_LOOP, state 6-10a) where UE test loop is activated. 2. Information about activating UE test loop function removed from test procedure as it is covered by initial conditions.
Consequences if not approved:	⌘ Test case may fail compliant UE.

Clauses affected:	⌘ 8.2.4.1a										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X	X			X	Other core specifications	⌘ 34.108
Y	N										
	X										
X											
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Affects REL-5, REL-4 and R99. Associated CRs to 34.108 (defining the UE state 6-10a) can be found in T1-										

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.

8.2.4.1a Transport channel reconfiguration (Transmission Rate Modification) from CELL_DCH to CELL_DCH of the same cell: Success

8.2.4.1a.1 Definition

8.2.4.1a.2 Conformance requirement

1. If the UE receives:

- a TRANSPORT CHANNEL RECONFIGURATIONmessage; 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.

...

2. 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:
- 2> not change its current UL Physical channel configuration.

...

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;

...

4. 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.

...

5. If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

- 1> in addition, if the message was received in CELL_DCH state and the UE remains in CELL_DCH state according to subclause 8.6.3.3 applied on the received message:
- 2> for each optional IE part of the IE "Downlink information for each radio link" that is not present:
- 3> do not change its current downlink physical channel configuration corresponding to the IE, which is absent, if not stated otherwise elsewhere.

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.6.4.

8.2.4.1a.3 Test purpose

To confirm that the UE reconfigures the physical channel and transport channel configuration according to a TRANSPORT CHANNEL RECONFIGURATION message, which specifies a reconfiguration by changing physical channel information and TFCS.

8.2.4.1a.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH [TEST_LOOP](#) (state 6-10a) as specified in clause 7.4 of TS 34.108. [The UL RLC SDU size for the loopback scheme is set to the size correspondent to the maximum uplink TFS as indicated in RADIO BEARER SETUP message during radio bearer establishment procedure.](#)

Note : Transmission rate shall be set to the maximum rate for the UE during the radio bearer establishment procedure.

Test Procedure

The UE is in CELL_DCH state.

~~The radio bearer is placed into UE test loop mode 1 described in TS 34.109 clause 5.3 and the UL RLC_SDU size for the loopback scheme is set to the maximum size possible when the maximum uplink TFS, as indicated in RADIO BEARER SETUP message during radio bearer establishment procedure, is used.~~

The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to modify the transmission rate which includes a new physical channel information and downlink TFCS to restrict the use of the highest rate TFCSs.

The UE shall reconfigure the new configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

UL MAC restriction is imposed on the SS so that SS can only receive using the maximum TFS and minimum TFS. Both TFSs belong to the currently limited downlink TFCS of the UE (i.e. the TFCS after reconfiguration).

Then the SS transmits a RLC_SDU whose size is the same as the UL RLC_SDU size for the loopback scheme. The UE receives this RLC_SDU and decode it according to the new TFCS.

The RLC_SDU is then looped backed to the SS. The SS should receive the expected data as a RLC_SDU exactly as the one transmitted to the UE.

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	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
2a		←	DOWNLINK RLC SDU	
2b		→	UPLINK RLC SDU	RLC SDU sent back shall be the same as the one sent from the SS.
3			Void	
4			Void	
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

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
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	
- SCCPCH TFCS	Not Present
- CHOICE mode	FDD
- CHOICE DL parameters	Explicit
- DL DCH TFCS	
- CHOICE TFCI Signalling	Normal
- TFCI Field 1 Information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfigure	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10.2.4 Parameter Set which is used in RADIO BEARER SETUP message in initial procedure.
- CTFC information	
- CTFC	Reference to TS 34.108 clause 6.10.2.4 Parameter Set as defined in RADIO BEARER SETUP message with highest rate CTFC removed.
- Power offset information	Not Present
Downlink information common for all radio links	
- CHOICE mode	FDD
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set. Set to a value that matches the new CTFC.
Downlink information for each radio link list	
- Downlink information for each radio links	
- CHOICE mode	FDD
- DL channelisation code	
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set. Set to a value that matches the new CTFC.
Added or Reconfigured DL TrCH information	Not Present

8.2.4.1a.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 2a the UE shall transmit a RLC_SDU that is same as the transmitted data from SS in step 2a on the radio access bearer.

CHANGE REQUEST

34.123-1 CR 826 # rev **-** # Current version: **5.7.1**

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 Table 8.3.7-1 in relation to Package 2 test cases 8.3.7.x (Editorial Revision of T1-040669)	
Source:	#	Anite	
Work item code:	#	TEI	Date: # 12/05/2004
Category:	#	F	Release: # Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		F (correction)	2 (GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96 (Release 1996)
		B (addition of feature),	R97 (Release 1997)
		C (functional modification of feature)	R98 (Release 1998)
		D (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	#	Entries in table 8.3.7-1 for test cases 8.3.7.2, 8.3.7.2a, 8.3.7.3, and 8.3.7.3a are inconsistent with the full test case descriptions.
Summary of change:	#	Table 8.3.7-1 modified to ensure consistency.
Consequences if not approved:	#	Inconsistencies in the specification.

Clauses affected:	#	8.3.7								
Other specs affected:	#	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;"> </td> </tr> </table> Other core specifications # _____ Test specifications # _____ O&M Specifications # _____	Y	N						
Y	N									
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 Inter-system hard handover from UTRAN to GSM

Clauses 8.3.7 contains test procedures to be used for executing Inter-system Handover from UTRAN to GSM tests. Table 8.3.7-1 contains a summary of the different combinations of parameters being tested, together with a reference to the appropriate generic test procedure. If a test uses a parameter which the UE under test does not support, the test shall be skipped. Test cases in this clause are applicable only to the UE supporting both UTRAN and GSM. The test TEST USIM shall support service 27 to carry out these test cases.

Table 8.3.7-1

From	To	State of call	Ref. clause	Exec counter	Remark
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1	1	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1	2	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.1	3	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM HR	U10	8.3.7.1	4	call active state
UTRAN (Streaming/unknown/ uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.2	1	Same data rate
UTRAN (Streaming/unknown/ uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.2a	1	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps CS data	U10	8.3.7.2a	2	Same data rate
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 57.6 kbps CS data	U10	8.3.7.2a	3	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + interactive/ background UL: 32kbps, DL: 32 kbps (note) + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	1	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + interactive/ background UL: 32kbps, DL: 32 kbps (note) + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	2	Data rate down grading
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + interactive/ background UL: 32kbps, DL: 32 kbps (note) + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.3a	1	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + interactive/ background UL: 32kbps, DL: 32 kbps (note) + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps HSCSD	U10	8.3.7.3a	2	Data rate down grading

UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + interactive/ background UL: 32kbps, DL: 32 kbps (note) + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps CS data	U10	8.3.7.3a	3	Data rate down grading
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U1	8.3.7.4	1	During call establishment
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.5	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.6	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.7	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.8	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.9	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.10	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.11	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U10	8.3.7.12	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM FR	U1	8.3.7.13	1	call under establishment

NOTE: The PS part is only applicable for UE supporting CS+PS service.

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040627

CR-Form-v7	
CHANGE REQUEST	
TS 34.123-1 CR 783 rev -	Current version: 5.7.1

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	Removal of 8.2.1.26 (P4)		
Source:	Panasonic		
Work item code:	TEI	Date:	5/4/04
Category:	F	Release:	Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	Although in T1#22, it was clarified by Ericsson that 8.2.1.26 was introduced to check the START value in the Radio bearer setup complete message after RLC-TM RABs have been established, further investigation confirmed that in TTCN, this check can also be done in TC 8.2.1.1 in future when validation is performed with Ciphering 'On'. Hence, 8.2.1.26 is still deemed redundant.
Summary of change:	Remove test case 8.2.1.26.
Consequences if not approved:	This test case will be a duplicate of TC 8.2.1.1.

Clauses affected:	8.2.1.26						
Other specs affected:	<table border="1" style="font-size: x-small;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	TS 34.123-2
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<table border="1" style="font-size: x-small;"> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications				
<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<table border="1" style="font-size: x-small;"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications				
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
Other comments:	Affects R'99, 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.

<Start of modification>

8.2.1.26 ~~Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Transparent mode with ciphering on)~~ Void~~8.2.1.26.1 Definition~~~~8.2.1.26.2 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;~~

~~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.~~

~~...~~~~If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:~~

- ~~1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED_RABS;~~
- ~~2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or~~
- ~~2> if at least one RLC AM or RLC UM radio bearer is included in the IE "RB information to setup":~~
 - ~~3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";~~

~~3> store the calculated START value in the variable START_VALUE_TO_TRANSMIT.~~

~~1> for each radio bearer in the IE "RB information to setup":~~

~~2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED_RABS:~~

~~3> perform the actions specified in subclause 8.6.4.3;~~

~~...~~

~~If the IE "RB information to setup" 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> use the same START value to initialise the hyper frame number components of COUNT_C variables for all the new radio bearers to setup;~~

~~1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and~~

~~1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":~~

~~2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":~~

~~3> if the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":~~

~~4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:~~

~~5> initialise the 20 most significant bits of the HFN component of COUNT_C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT_C at each CFN cycle; and~~

~~5> set the remaining LSB of the HFN component of COUNT_C to zero;~~

~~5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.~~

~~4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT_C activation time" included in the response message:~~

~~5> initialise the 20 most significant bits of the HFN component of COUNT_C common for all transparent mode radio bearers of this CN domain with the START value in the variable START_VALUE_TO_TRANSMIT;~~

~~5> set the remaining LSB of the HFN component of COUNT_C to zero;~~

~~5> start incrementing the COUNT_C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.~~

~~1> if the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":~~

~~2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.~~

Reference

3GPP TS 25.331 clause 8.2.2.3, 8.2.2.4, 8.6.4.2, 8.6.4.3.

~~8.2.1.26.3 Test purpose~~

~~To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message, and that ciphering is applied onto this new radio bearer~~

~~8.2.1.26.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 1 cell~~

~~UE: CS-DCCH_DCH (state 6-5).~~

~~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		
				The UE is in CELL_DCH state.
1		←	RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	
3			Void	
4		↔	E.g. "speech" RLC-TM PDU's	Check that the ciphering is working.
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~~

~~RADIO BEARER SETUP COMPLETE (Step 2)~~

~~The contents of RADIO BEARER SETUP COMPLETE message in this test case is identical to the message sub-type indicated by "Speech from CELL_DCH to CELL_DCH in CS" in [9] TS 34.108 clause 9 with the following exceptions:~~

Information Element	Value/remark
START	The first/ leftmost bit of the bit string contains the most significant bit of the START.

~~8.2.1.26.5 Test requirement~~

~~After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.~~

<End of modification>

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040646 ⌘

CR-Form-v7	CHANGE REQUEST
⌘ TS 34.123-1 CR 799 ⌘ rev - ⌘ Current version: 5.7.1 ⌘	

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 test case 8.2.1.27 (Low priority)		
Source:	⌘ Panasonic		
Work item code:	⌘ TEI	Date:	⌘ 6/4/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 and test sequence not inline.
Summary of change:	⌘ Test requirement revised.
Consequences if not approved:	⌘ Test requirement not align with expected behaviour of a conformance UE.

Clauses affected:	⌘ 8.2.1.27										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	⌘
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘ Affects R'99, Rel-4 and Rel-5 UEs.										

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8.2.1.27 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (two radio links, start of HS-DSCH reception)

8.2.1.27.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.27.2 Conformance requirement

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> 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":
 - 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".
- 1> if the IE "HS-DSCH Timeslot Configuration" is included:
 - 2> store the received configuration.

...

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".
- 1> in the case of TDD:
 - 2> receive the HS-SCCH(s) according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link;
 - 2> receive the HS-SICH according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link.

...

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 8,6,3,1, 8.6.3.1b, 8.6.5.6, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.2.1.27.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to HS-DSCH according to the received RADIO BEARER SETUP message when having two radio links established.

8.2.1.27.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 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

The UE is in CELL_DCH state. Only signalling radio bearers have been established.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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.

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. After the UE receives this message, it configures them and establishes a radio access bearer and cell 1 shall be assigned as the serving HS-DSCH cell. 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		←	ACTIVE SET UPDATE	The SS instructs the UE to add cell 2 in the active set.
2		→	ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
3		←	RADIO BEARER SETUP	
4		→	RADIO BEARER SETUP COMPLETE	
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

ACTIVE SET UPDATE (Step 1)

Information Element	Value/remark
Radio link addition information <ul style="list-style-type: none"> - Primary CPICH Info - Primary scrambling code - Downlink DPCH info for each RL - CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT cell identity - Close loop timing adjustment mode - TFCI combining indicator - SCCPCH information for FACH 	Primary scrambling code of Cell 2 FDD P-CPICH may be used. Calculated value from Cell synchronisation information Not present This IE is repeated for all existing downlink DPCHs allocated to the UE Not present Refer to the parameter set in TS 34.108 For each DPCH, assign the same code number in the current code given in cell 1. Not present 1 Not present Not present TRUE Not present

RADIO BEARER SETUP (Step 3)

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
Downlink information for each 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 - Serving HS-DSCH radio link indicator - Downlink DPCH info for each RL - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - SCCPCH information for FACH - Downlink information for each radio link - Choice mode - Primary CPICH info - Primary scrambling code - PDSCH with SHO DCH info - PDSCH code mapping - Serving HS-DSCH radio link indicator - Downlink DPCH info for each RL - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - SCCPCH information for FACH	(for cell 1) FDD Ref. to the Default setting in TS34.108 clause 6.1 (FDD) Not Present Not Present TRUE Not present Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 Not Present 1 Reference to TS34.108 clause 6.10 Parameter Set 0 No change 0 Not Present Not Present Not Present (for cell 2) FDD Ref. to the Default setting in TS34.108 clause 6.1 (FDD) Not Present Not Present FALSE Not present Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 Not Present 1 Reference to TS34.108 clause 6.10 Parameter Set 0 No change 0 Not Present Not Present Not Present

8.2.1.27.5 Test requirements

After step 43, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

CR-Form-v7
CHANGE REQUEST
⌘ 34.123-1 CR 800 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ General corrections to section 6 of 34.123-1 (idle mode)		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2004-04-30
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ <ol style="list-style-type: none"> 1. Misleading title for section 6.1. 2. Clarification of LAC and RAC for cells belonging to different RAT
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Section 6.1: changed title from "In a pure 3GPP environment" to "In a pure 3G environment". 2. Section 6.2: added clarification that cells belonging to different RAT shall use different LAC and RAC.
Consequences if not approved:	⌘ Inter-RAT idle mode test cases does not reflect cell environment representative to live networks.

Clauses affected:	⌘ 6.1 and 6.2										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N		X		X		X		
Y	N										
	X										
	X										
	X										
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.

<Start of first modified section>

6.1 In a pure 3GPP environment

6.1.1 PLMN selection

<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.](#)

<End of modified section>

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040710

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 817 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 8.2.3.22 (Low Priority)		
Source:	⌘ Panasonic		
Work item code:	⌘ TEI	Date:	⌘ 5/4/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ Editorial correction to subclause number.		
Summary of change:	⌘ Subclause number of method of test section is replaced with 8.2.3.22.4		
Consequences if not approved:	⌘ Wrong sub clause number reference.		

Clauses affected:	⌘ 8.2.3.22									
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘
Y	N									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
Other comments:	⌘ Affects R'99, 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.

<Start of modification>**8.2.3.22 Radio Bearer Release for transition from CELL_FACH to CELL_PCH:
Success****8.2.3.22.1 Definition****8.2.3.22.2 Conformance requirement**

If the UE receives:

-a RADIO BEARER RELEASE message;

it shall:

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 procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters CELL_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 TS25.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> select Secondary CCPCH according to TS25.331 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 TS25.331 subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> keep the configuration existing before the reception of the message and transmit a failure response message as specified in TS25.331 subclause 8.2.2.9

1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info", and the UE selected another cell than indicated by this IE:

2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure is successfully completed:

3> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.3, 8.5 and 8.6.

8.2.3.22.3 Test purpose

1. To confirm that the UE transmits RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.
2. To confirm that the UE transits from CELL_FACH to CELL_PCH according to the RADIO BEARER RELEASE message.
3. To confirm that the UE releases the radio access bearer and selects a common physical channel.

8.2.23.22.4 Method of test

Initial Condition

System Simulator: 1 cell– Cell 1 is active.

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 of cell 1. The SS transmits a RADIO BEARER RELEASE message. The UE shall release all radio access bearer and enter CELL_PCH state after it transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC. Upon completion of the procedure, the SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in CELL_FACH state of cell 1.
2	←		RADIO BEARER RELEASE	
3		→	RADIO BEARER RELEASE COMPLETE	The UE transmits this message on uplink DCCH using AM RLC.
4				The SS waits for 5 s.
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 RELEASE (Step 2)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in [9] TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3

8.2.3.22.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on uplink DCCH using AM RLC.

After step 4 the UE shall be in CELL_PCH state in cell 1.

<End of modification>

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040715 ⌘

CR-Form-v7	
CHANGE REQUEST	
⌘ TS 34.123-1 CR 757 ⌘ rev <input type="checkbox"/> ⌘	⌘ Current version: 5.7.1 ⌘

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:	⌘ New SRNS relocation test cases (radio link failure)		
Source:	⌘ Panasonic		
Work item code:	⌘ TEI	Date:	⌘ 29/3/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 that verify the behaviour of the UE when radio link failure occurs after a SRNS relocation.
Summary of change:	⌘ New test case 8.2.6.41 has been added to confirm that the UE enters idle mode state when UE detects radio link failure after UE started using the new configuration but before receiving the RLC acknowledgement of the reconfiguration complete message.
Consequences if not approved:	⌘ Insufficient test coverage.

Clauses affected:	⌘ 8.2.6.41 (new)						
Other specs affected:	<table border="1" style="font-size: x-small;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	Other core specifications	⌘ 34.123-2
	Y	N					
	⌘	X					
<table border="1" style="font-size: x-small;"> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"></td> </tr> </table>	X		Test specifications				
X							
<table border="1" style="font-size: x-small;"> <tr> <td style="width: 20px;"></td> <td style="width: 20px;">X</td> </tr> </table>		X	O&M Specifications				
	X						
Other comments:	⌘ Affects R'99, 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.

8.2.6.41 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Failure (Radio link failure in new configuration)

8.2.6.41.1 Definition

8.2.6.41.2 Conformance requirement

<from sub-clause 8.2.2.14>

If the criteria for radio link failure is met in the new configuration during the reconfiguration procedure (i.e. while UE is waiting for RLC acknowledgement for a response message.) as specified in subclause 8.5.6, the UE shall:

1> if the received reconfiguration 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;

2> perform the actions specified in subclause 8.2.2.12b.

<from sub-clause 8.2.2.12b>

If:

- a cell update procedure according to subclause 8.3.1 is initiated; and
- the received reconfiguration 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> release all radio resources;

1> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers; and

1> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;

1> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

1> clear the variable ESTABLISHED_RABS;

1> if the received reconfiguration message contained the IE "Ciphering mode info":

2> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable SECURITY_MODIFICATION.

1> if the received reconfiguration message contained the IE "Integrity protection mode info":

2> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

1> enter idle mode;

1> perform the actions specified in subclause 8.5.2 when entering idle mode;

1> and the procedure ends.

NOTE: UTRAN should use RB Control messages to perform an SRNS relocation only in case of state transitions from CELL_DCH to CELL_DCH.

Reference

3GPP TS 25.331 clause 8.2.2, 8.6.3.4.

8.2.6.41.3 Test purpose

1. To confirm that the UE enters idle mode state when UE detects radio link failure after UE started using the new configuration but before receiving the RLC acknowledgement of the reconfiguration complete message.

8.2.6.41.4 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.

Specific Message Contents

System Information Block type 1 of Cell 1 to be transmitted before idle update preamble

Use the same message sub-type found in clause 6.1 of TS 34.108, with the following exception:

<u>Information Element</u>	<u>Value/remark</u>
<u>- UE Timers and constants in connected mode</u>	
<u>- T313</u>	<u>0</u>
<u>- N313</u>	<u>1</u>

Test Procedure

Table 8.2.6.41

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>			<u>Cell 2</u>		
		<u>T0</u>	<u>T1</u>	<u>T2</u>	<u>T0</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel Number</u>		<u>Ch. 1</u>			<u>Ch. 1</u>		
<u>CPICH Ec (FDD)</u>	<u>dBm/3.84MHz</u>	<u>-60</u>	<u>-75</u>	<u>-60</u>	<u>-75</u>	<u>-60</u>	<u>OFF</u>

Table 8.2.6.41 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 8.2.6.41. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "Downlink counter synchronisation info", IE "Ciphering mode info" and IE "Integrity protection mode info". 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' = MSB₂₀(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 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. On receiving PHYSICAL CHANNEL RECONFIGURATION COMPLETE message, SS shall not send RLC acknowledgement to UE and the SS shall configure its downlink transmission power settings according to columns "T2" in table 8.2.6.41.

UE shall detect a radio link failure in cell 2 and enters idle mode in cell 1. SS then call for procedure C.1 to verify that UE is in idle mode in cell 1.

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 8.2.6.41.
2		←	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 SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
3		→	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. Upon receiving this message, the SS shall not send RLC acknowledgement for this message and apply the downlink transmission power settings, according to the values in columns "T2" of table 8.2.6.41
4		↔	Call C.1.	C.1 is performed in cell 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

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

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:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA0/UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
<u>Integrity protection mode info</u>	
- <u>Integrity protection mode command</u>	<u>Start</u>
- <u>Downlink integrity protection activation info</u>	<u>Not Present</u>
- <u>Integrity protection algorithm</u>	<u>UIA1</u>
- <u>Integrity protection initialisation number</u>	<u>SS selects an arbitrary 32 bits number for FRESH</u>
<u>New U-RNTI</u>	
- <u>SRNC identity</u>	<u>0000 0000 0010B</u>
- <u>S-RNTI</u>	<u>0000 0000 0000 0000 0001B</u>
<u>CN Information info</u>	
- <u>PLMN identity</u>	<u>Not present</u>
- <u>CN common GSM-MAP NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>00 01H</u>
- <u>CN domain related information</u>	
- <u>CN domain identity</u>	<u>PS</u>
- <u>CN domain specific NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>05 00H</u>
- <u>CN domain identity</u>	<u>CS</u>
- <u>CN domain specific NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>1E 01H</u>
<u>Downlink counter synchronisation info</u>	
- <u>RB with PDCP information list</u>	<u>Not Present.</u>
<u>Downlink information for each radio links</u>	
- <u>Primary CPICH info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 2</u>

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 3)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

<u>Information Element</u>	<u>Value/remark</u>
<u>Uplink counter synchronisation info</u>	
- <u>RB with PDCP information list</u>	<u>Not present</u>
- <u>START list</u>	<u>Check that this IE is present.</u>

8.2.6.41.5 Test requirement

After step 2, 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' = MSB₂₀(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.

After step 3, UE shall enter idle mode in cell 1.

CR-Form-v7	
CHANGE REQUEST	
# 34.123-1 CR 853 # rev - #	Current version: 5.7.1 #

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 low priority TC 8.3.11.3		
Source:	# Nokia		
Work item code:	# TEI	Date:	# 27/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	# Lower layer failure before the ROUTING AREA UPDATE ACCEPT or ROUTING AREA UPDATE REJECT message is received shall abort the procedure. The UE shall start retransmission timer T3311 and perform routing area updating when a new cell is entered. (Ref. 24.008 v3.18.0 clauses 4.7.5.1.5 and 4.2.5.1.4)
Summary of change:	# 1) In Initial conditions, a 3 rd cell is added. 2) Test step added before step 7 where the UE shall enter a new cell in UTRAN and perform routing area updating.
Consequences if not approved:	# Test case is not in line with the core specification.

Clauses affected:	# 8.3.11.3						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	#	X	#	34.123-3
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X	#						
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#	X						
#	X						
Other comments:	# Affects R99, Rel-4 and Rel-5.						

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.

8.3.11.3 Inter-RAT cell change order from UTRAN/To GPRS/CELL_DCH/Failure (T309 expiry)

8.3.11.3.1 Definition

8.3.11.3.2 Conformance requirement

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL_DCH:
 - 2> revert back to the UTRA configuration;
 - 2> establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;
 - 2> if the UE does not succeed in establishing the UTRA physical channel(s):
 - 3> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
 - 3> when the cell update procedure has completed successfully:
 - 4> proceed as below.
 - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
 - 3> include the IE "RRC transaction identifier"; and
 - 3> 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
 - 3> clear that entry;
 - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
 - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.

Reference(s)

TS 25.331 clause 8.3.11

8.3.11.3.3 Test purpose

To verify that when UE received CELL CHANGE ORDER FROM UTRAN message in CELL_DCH state and if the establishment of the connection to the other RAT failed due to expiry of timer T309 prior to the successful establishment of a connection to the target RAT:

- a. revert back to the UTRA configuration;
- b. establish the UTRA physical channel(s) used at the time for reception of CELL CHANGE ORDER FROM UTRAN;

- c. transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message and set the IE "Inter-RAT change failure" to "physical channel failure".

8.3.11.3.4 Method of test

Initial conditions

System Simulator: ~~2-3~~ cells - Cells 1 and 3 are ~~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 and location area.

UE: PS-DCCH_DCH (State 6-7) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statement

- UE supports both GSM/GPRS and UTRAN Radio Access Technologies,
- 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 state PS-DCCH_DCH (State 6-7). 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 starts the timer T309. After the UE receives the command it shall configure itself accordingly but cannot complete the cell change, as SS does not respond to the CHANNEL REQUEST message transmitted by UE till the expiry of T309 timer. The SS checks that the cell change has failed by checking that the UE transmits the CELL CHANGE ORDER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into PS-DCCH _DCH (State 6-7) 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.
4	UE			UE starts the timer T309. The UE accepts the cell change command and switches to the 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
6	→			SS does not respond to the channel request. UE sends M + 1 CHANNEL REQUEST messages
				The SS does not transmit a response and wait for T309 timer to expire. <u>Upon expiry of T309 the UE shall start timer T3311 and shall perform ROUTING AREA UPDATE. The UE shall perform ROUTING AREA UPDATE also when a new cell 3 is entered.</u>
7	→		CELL CHANGE ORDER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell 1.

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	

Information Element	Value/remark
- 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 <i>Radio Access Technology</i>	
- GSM	
- BSIC	BSIC1
- Band Indicator	DCS 1800 band used
- BCCH ARFCN	1
- NC mode	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 - 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. 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

8.3.11.3.5 Test requirement

In step 5 the UE shall transmit a CHANNEL REQUEST message on RACH.

In step 7 the SS shall receive CELL CHANGE ORDER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040919 ⌘

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 822 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 TC 8.3.1.30 (Low Priority)
Source:	⌘ Panasonic
Work item code:	⌘ TEI Date: ⌘ 7/5/04
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: Use <u>one</u> of the following releases: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900 . Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ In T1#21, Panasonic presented T1-031502 to update the timer value of T314 and T315 to comply with the values provided by 25.331. However, some of the timing related to these timer are not updated accordingly.
Summary of change:	⌘ Timing are updated according to the approved T1-0301502.
Consequences if not approved:	⌘ The timer values are not align and thus the test case cannot be run.

Clauses affected:	⌘ 8.3.1.30												
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘ <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Y	N												
<input type="checkbox"/>	<input checked="" type="checkbox"/>												
Other comments:	⌘ Affects R'99, 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.

8.3.1.30 Cell Update: Radio Link Failure (T314>0, T315>0), PS RAB

8.3.1.30.1 Definition

8.3.1.30.2 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; and

2> if the UE is in CELL_DCH state; and

2> if 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> 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 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:

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 "useT315":

4> start timer T315.

...

Upon expiry of timer T314 the UE shall:

1> if timer T302 is running:

...

1> if timer T302 is not running and timer T315 is running:

- 2> set IE "T314 expired" in variable RB_TIMER_INDICATOR to TRUE;
- 2> release locally all radio bearers which are 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";
- 2> indicate release of those radio access bearers to upper layers;
- 2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T315 are not running:

- 2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- 2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- 2> clear the variable PDCP_SN_INFO;
- 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> set the variable CELL_UPDATE_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

Upon expiry of timer T315 the UE shall:

1> if timer T302 is running:

...

1> if timer T302 is not running and timer T314 is running:

- 2> set IE "T315 expired" in variable RB_TIMER_INDICATOR to TRUE;
- 2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED_RABS the value of the IE "Re-establishment timer" is set to "use T315";
- 2> indicate release of those radio access bearers to upper layers;
- 2> delete all information about those radio access bearers from the variable ESTABLISHED_RABS.

1> if timers T302 and T314 are not running:

- 2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;
- 2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;
- 2> clear the variable PDCP_SN_INFO;
- 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;

- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> set the variable CELL_UPDATE_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.30.3 Test purpose

1. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T315 and try to find a new cell after detecting that a radio link failure has occurred.
2. To confirm that the UE shall indicate to the non-access stratum the release of radio access bearer which is associated with T314 and try to find a new cell after detecting that a radio link failure has occurred. (This test purpose is only applicable when CS RAB is set up in the initial condition.)
3. To confirm that the UE enters idle mode after T315 expires and T302 and T314 are not running.

8.3.1.30.4 Method of test

Initial Condition

System Simulator: 1 cell (Cell 1 is active).

UE: PS_DCCH+DTCH_DCH (state 6-10 or PS+CS-DCCH+DTCH_DCH (state 6-14), if UE supports both CS and PS domains.

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
- T314	12
- T315	30

Test Procedure

Table 8.3.1.30

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF
P-CCPCH RSCP (TDD)	dBm	-60	OFF

The UE is brought to CELL_DCH state 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 8.3.1.30. The UE shall detect a radio link failure in cell 1.

Case A (the initial condition of the UE is in state 6-10):

The SS shall wait for ~~46s~~ [34.17s](#) (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

Case B (the initial condition of the UE is in state 6-14):

The SS shall wait for ~~13.67~~ [12s](#) (see Note 1) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T314 and attempt to re-select to cell 1. After that, it shall then enter CELL_FACH state and transmit CELL_UPDATE on the uplink CCCH to SS. The SS transmits CELL_UPDATE_CONFIRM message which includes dedicated physical channel parameters on downlink DCCH. Then the UE shall transmit a PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE message on the uplink DCCH. SS transmits COUNTER_CHECK message to UE. UE shall transmit a COUNTER_CHECK_RESPONSE message back to SS. Then SS configures its downlink transmission power settings according to column 'T1' in table 8.3.1.30. The UE shall detect a radio link failure in cell 1. The SS shall wait for ~~46s~~ [34.17s](#) (see Note 2) and then configure its downlink transmission power settings according to column 'T0' in table 8.3.1.30. The UE shall release radio bearer associated with T315 and enter idle mode state. SS calls for generic procedure C.1 to check that UE is in Idle Mode state in cell 1.

NOTE 1: Considering the timer tolerance of the UE, T314 may expire between $12s \pm 0.3s$, therefore the SS must wait for at least 12.3s before it reconfigures its downlink transmission power. Since SS has a timer tolerance of 10% or $2 * TTI + 55ms$ (consider the greater value of the two), the test case shall set the SS to reconfigure the power level 13.67s after the SS configures the power settings according to column 'T1' in table 8.3.1.30.

NOTE 2: Considering the timer tolerance of the UE, T315 may expire between $30s \pm 0.75s$, therefore the SS must wait for at least 30.75s before it reconfigures its downlink transmission power. Since SS has a timer tolerance of 10% or $2 * TTI + 55ms$ (consider the greater value of the two), the test case shall set the SS to reconfigure the power level 34.17s after the SS configures the power settings according to column 'T1' in table 8.3.1.30.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
2				For Case A, go to step 9. SS waits for 12s 13.67s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.30.
3		→	CELL UPDATE	UE shall select cell 1 and enter CELL_FACH state to transmit this message
4		←	CELL UPDATE CONFIRM	See message content.
5		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
6		←	COUNTER CHECK	SS sent the COUNT-C info for the RBs that were established in the initial condition.
7		→	COUNTER CHECK RESPONSE	
8				SS configures cell 1 according to column 'T1' in table 8.3.1.30.
9				SS waits for 46s 34.17s after the completion of step 1 and then configures cell 1 according to column 'T0' in table 8.3.1.30.
10		↔	CALL C.1	SS execute this procedure in cell 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

CELL UPDATE (Step 4)

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	
- S-RNTI	Check to see if set to value assigned in cell 1.
- SRNC Identity	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	TRUE
- T315 expired	FALSE

CELL UPDATE CONFIRM (Step 5)

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
CHOICE channel requirement	Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A4.
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 A4.
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 A4.

COUNTER CHECK (Step 7)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Calculated value
Integrity check info	
RB COUNT-C MSB information	
- RB identity	Set to the RB identity that was set up in the initial condition and support PS service.
- COUNT-C MSB uplink	Set to the value stored in the SS
- COUNT-C MSB downlink	Set to the value stored in the SS

COUNTER CHECK RESPONSE (Step 8)

Information Element	Value/remark
Message Type	0
RRC transaction identifier	Not checked
Integrity check info	Not present
RB COUNT-C information	

8.3.1.30.5 Test requirement

Case A:

After step 2, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

Case B:

After step 2, the UE shall detect the presence of cell 1, perform cell re-selection and transmit a CELL UPDATE message.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 7, the UE shall transmit a COUNTER CHECK RESPONSE message without including IE "RB COUNT-C information".

After step 10, the UE shall detect the presence of cell 1 and enter idle mode state in cell 1.

CHANGE REQUEST

⌘ **TS 34.123-1 CR 829** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 package 4 RRC test cases 8.2.3.11, 8.2.6.11 and 8.2.6.12		
Source:	⌘ Nokia		
Work item code:	⌘ TEI	Date:	⌘ 29/04/2004
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ <ol style="list-style-type: none"> 1. Testcases 8.2.3.11 and 8.2.6.11 are misleading as they do not explicitly refer to cell reselection which should take place in the case of physical channel failure for transition CELL-FACH to CELL-DCH. 2. Also testcase 8.2.6.12 refers to Cell Reselection in the title which is also misleading as the difference between this and the previous testcase is actually that a cell update occurs.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Add the paragraph from 25.331 section 8.2.2.7 relating to the case where the previous state was CELL-FACH. 2. Add the cell reselection/cell update to the test sequence descriptions. 3. Change title of 8.2.6.12 to include Cell Update not Cell Reselection.
Consequences if not approved:	⌘ Testcases may be incorrectly implemented resulting in failure of compliant UEs or passing of non-compliant UEs.

Clauses affected:	⌘ 8.2.3.11, 8.2.6.11 and 8.2.6.12										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"><input type="checkbox"/></td> <td style="width: 20px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="width: 20px;"><input type="checkbox"/></td> <td style="width: 20px;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="width: 20px;"><input type="checkbox"/></td> <td style="width: 20px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
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.

8.2.3.11 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old configuration)

8.2.3.11.1 Definition

8.2.3.11.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

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 does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to TS 25.304;

...

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.

...

The UE shall:

1> in case of reception of a RADIO BEARER RELEASE message:

...

2> transmit a RADIO BEARER RELEASE FAILURE as response message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.7, 8.2.2.9, 8.5.4.

8.2.3.11.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if the UE fails to release the radio bearers in accordance with the specified settings in RADIO BEARER RELEASE message before T312 timer expires.

8.2.3.11.4 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.

Test Procedure

The UE is in CELL_FACH state. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a RADIO BEARER RELEASE message and keeps its current physical channel configuration. The UE is expected to encounter a failure while releasing the radio bearer. After T312 timer expires, the UE shall revert to the old radio bearer configuration, so the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
0b		→	MEASUREMENT REPORT	
1		←	RADIO BEARER RELEASE	
2				The SS does not configure the specified L1.
3		→	RADIO BEARER RELEASE FAILURE	After T312 expiry the UE fails to release a radio bearer and reverts to the old configuration.
4		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 0a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	Not Present
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- 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	
- UE state	All states
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 0b and 4)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions and the order in which the RBs are reported is not checked:

Information Element	Value/Remarks
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 RELEASE (Step 1)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Clause 9 of TS 34.108.

RADIO BEARER RELEASE FAILURE (Step 2)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.3.11.5 Test requirement

After step 0a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" in IE "failure cause".

After step 3, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

8.2.6.11 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old configuration)

8.2.6.11.1 Definition

8.2.6.11.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

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 does not include dedicated physical channels \(CELL_FACH state\):](#)

[2> select a suitable UTRA cell according to TS 25.304:](#)

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.

...

The UE shall:

1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

2> transmit a PHYSICAL 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, 8.5.4.

8.2.6.11.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message before the T312 expiry.

8.2.6.11.4 Method of test

Initial Condition

System Simulator: 1 cell

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. SS then send a MEASUREMENT CONTROL message to UE. The UE shall perform periodical traffic volume measurement according to this message and then transmit MEASUREMENT REPORT message back to SS. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_FACH to CELL_DCH. However, the SS keeps its current physical channel configuration and then the UE cannot synchronise with the SS. After T312 expires, the UE attempt to revert to the old configuration. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set "physical channel failure" in IE "failure cause". UE shall continue its traffic volume measurement and send MEASUREMENT REPORT messages back to SS periodically.

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	
3a		←	MEASUREMENT CONTROL	SS requests UE to perform periodical traffic volume measurement.
3b		→	MEASUREMENT REPORT	
4		←	PHYSICAL CHANNEL RECONFIGURATION	
5				The SS does not reconfigure the physical channel, hence the UE shall detect a failure to reconfigure to the new physical channel.
6		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expires the UE reverts to the old configuration and transmits this message.
7		→	MEASUREMENT REPORT	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in clause 9 of TS 34.108 for FDD or for TDD.

MEASUREMENT CONTROL (Step 3a)

Use the MEASUREMENT CONTROL message as defined in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement reporting mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical Reporting
- Periodical Reporting / Event Trigger Reporting Mode	
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	RACHorCPCH
- UL Target Transport Channel ID	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	
- UE state	All states except CELL_DCH
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	8000
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 3b and 7)

Check to see if the same message type found in [9] TS 34.108 Clause 9 is received, with the following exceptions and the order in which the RBs are reported is not checked:

Information Element	Value/Remarks
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

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in clause 9 of TS 34.108 for FDD or for TDD.

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 6)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.6.11.5 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 3a, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, specifying "physical channel failure" in IE "failure cause".

After step 6, the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH, reporting the RLC buffer payload of each RBs mapped on RACH at every 8s interval.

8.2.6.12 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and cell update ~~cell re-selection~~)

8.2.6.12.1 Definition

8.2.6.12.2 Conformance requirement

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel establishment failure".

...

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 does not include dedicated physical channels (CELL_FACH state):

2> select a suitable UTRA cell according to TS 25.304;

2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:

3> initiate a cell update procedure according to TS 25.331 subclause 8.3.1, using the cause "Cell reselection";

3> after the cell update procedure has completed successfully:

4> proceed as below.

1> transmit a failure response message as specified in TS 25.304 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
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and

- does not include the IE "Cipherring 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.

...

The UE shall:

1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:

...

2> transmit a PHYSICAL 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, 8.5.4

8.2.6.12.3 Test purpose

To confirm that the UE initiates a cell update procedure after it fails to reconfigure the new physical channel and selects another cell.

To confirm that UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message after UE completes cell update procedure.

8.2.6.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

Table 8.2.6.12

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	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.6.12 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. 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. Then SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, but the SS does not reconfigure L1 accordingly. The SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.12. As a result, the UE fails to synchronise on the new physical channel before timer T312 expires. UE may send a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure" to cell 1. UE reselects to cell 2 and then the UE shall transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "Cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink DCCH after receiving a CELL UPDATE message. If not already done so, the UE may transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure" in cell 2. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 2 to acknowledge the reception of new C-RNTI value. If not already done so, the UE shall transmit a PHYSICAL 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		←	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	The SS does not configure the new dedicated physical channel in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.6.12.
5		→	PHYSICAL CHANNEL RECONGURATION FAILURE (option 1)	UE shall transmit this message in the cell 1.
6			Void	
7		→	CELL UPDATE	This message includes the value "cell reselection" set in IE "Cell update cause".
8		←	CELL UPDATE CONFIRM	
8a		→	PHYSICAL CHANNEL RECONGURATION FAILURE (option 2)	UE shall transmit this message in the cell 2.
9		→	UTRAN MOBILITY INFORMATION CONFIRM	
10		→	PHYSICAL CHANNEL RECONGURATION FAILURE (option 3)	UE shall transmit this message in the cell 2.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Clause 9 of TS 34.108 for FDD or for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Clause 9 of TS 34.108 for FDD or for TDD.

CELL UPDATE (Step 7)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Clause 9 of TS 34.108 for FDD or for TDD with the following exceptions:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	Assigned previously in cell 1 Assigned previously in cell 1 "cell reselection"

CELL UPDATE CONFIRM (Step 8)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Clause 9 of TS 34.108, with the following exception.

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 9)

The contents of UTRAN MOBILITY INFORMATION CONFIRM message is identical as "Contents of UTRAN MOBILITY INFORMATION CONFIRM message" as found in Clause 9 of TS 34.108 for FDD or for TDD.

PHYSICAL CHANNEL RECONGURATION FAILURE (Steps 5, 8a and 10)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.6.12.5 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 6 the UE shall transmit a CELL UPDATE message using RLC-TM mode on the uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2.

After step 8, UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message.

The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure" after step 4, 8 or 9.

CHANGE REQUEST

34.123-1 CR 830 # rev - # Current version: 5.7.1

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 low priority radio bearer test cases (minimum set of TFCS)		
Source:	# Ericsson		
Work item code:	# TEI	Date:	# 2004-05-03
Category:	# F	Release:	# REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# Some low priority radio bearer test cases does not take minimum set of TFCS into consideration.
Summary of change:	# <ol style="list-style-type: none"> 1. Editorial corrections 2. Updated restricted TFCS to take minimum set of TFCS into consideration for following test cases: 14.2.25.1, 14.2.25.2, 14.2.34.2, 14.2.35.1, 14.2.35.2, 14.2.38.1, 14.2.38.2, 14.2.44.1, 14.2.44.2, 14.2.56, 14.3.2.1, 14.3.2.2, 14.3.3.1 and 14.3.3.2 3. Changes introduced in revision in T1-040947: Additional corrections to 14.2.56 and 14.2.44.2
Consequences if not approved:	# Invalid configuration in UE requested by SS

Clauses affected:	# 14										
Other specs Affected:	# <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">X</td> </tr> </table> Test specifications # <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">X</td> </tr> </table> O&M Specifications # <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">#</td> <td style="width: 20px; text-align: center;">X</td> </tr> </table>	Y	N	#	X	#	X	#	X	#	X
Y	N										
#	X										
#	X										
#	X										
#	X										
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.

14.2.23.2 Interactive or background / UL:32 DL:8 kbps / PS RAB / (TC, 20 ms TTI)

14.2.23.2.1 Conformance requirement

See 14.2.4.1.

14.2.23.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23 for the turbo channel coding and uplink 20 ms TTI case.

14.2.23.2.3 Method of test

Uplink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF0, TF1)
UL_TFC4	(TF1, TF1)
UL_TFC5	(TF2, TF1)

Downlink TFS:

	TFI	RB5 (8 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 312	RB5: 312
2	DL_TFC1	UL_TFC2	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 632	RB5: 632

NOTE1: : UL_TFC0, UL_TFC1 and UL_TFC3 are part of minimum set of TFCs.
NOTE2: 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.

14.2.23.2.4 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).
3. At step 15 the UE shall return
 - for sub-test 1 and 2: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.23.3 Interactive or background / UL:32 DL:8 kbps / PS RAB / (CC, 10 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23 for the convolutional channel coding and uplink 10 ms TTI case.

See test case 14.2.23.1 for test procedure and test requirement.

14.2.23.4 Interactive or background / UL:32 DL:8 kbps / PS RAB / (CC, 20 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23 for the convolutional channel coding and uplink 20 ms TTI case.

See test case 14.2.23.2 for test procedure and test requirement.

14.2.23a Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.23a.1 Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / CC

14.2.23a.1.1 Conformance requirement

See 14.2.4.1.

14.2.23a.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23a, for a convolutional coding case.

14.2.23a.1.3 Method of test

See 14.1.1 for test procedure.

Uplink TFS:

	TFI	RB5 (8 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148

Uplink TFCS:

TFCI	(8 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF0, TF1)
UL_TFC3	(TF1, TF1)

Downlink TFS:

		RB5 (8 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148

Downlink TFCS:

TFCI	(8 kbps RAB, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, 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	UL_TFC1	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312	RB5: 312
NOTE: 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 DL TFS size 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 uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.2.23a.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

- 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).
3. At step 15 the UE shall return
 - for sub-test 1: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.23a.2 Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / TC

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23a, for a turbo coding case.

See test case 14.2.23a.1 for test procedure and test requirement.

14.2.23b Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.23b.1 Conformance requirement

See clause 14.2.4.1.

14.2.23b.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23b.

14.2.23b.3 Method of test

Uplink TFS:

	TFI	RB5 (16 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF0, TF1)
UL_TFC4	(TF1, TF1)
UL_TFC5	(TF2, TF1)

Downlink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)
DL_TFC5	(TF2, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly 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, UL_TFC0 DL_TFC3, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, UL_TFC0 DL_TFC3, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 632	RB5: 632

NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC3 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 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).

See 14.1.1 for test procedure.

14.2.23b.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
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).
3. At step 15 the UE shall return
 - for sub-test 1 and 2: an RLC SDU on RB5 having the same content as sent by the SS.

14.2.23c Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23c.

14.2.23c.1 Conformance requirement

See 14.2.4.1.

14.2.23c.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23c.

14.2.23c.3 Method of test

Uplink TFS:

	TFI	RB5 (32 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 (32 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

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	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, UL_TFC0 DL_TFC5, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, UL_TFC0 DL_TFC5, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, UL_TFC0 DL_TFC5, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952	RB5: 952
4	DL_TFC4	UL_TFC4	DL_TFC0, UL_TFC0 DL_TFC5, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	RB5: 1272
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. For 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 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).</p>						

See 14.1.1 for test procedure.

14.2.23c.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
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 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.23d Interactive or background / UL:32 DL:32 kbps / PS RAB (20 ms TTI) + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.23d.1 Conformance requirement

See 14.2.4.1.

14.2.23d.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23d.

14.2.23d.3 Method of test

Uplink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF0, TF1)
UL_TFC4	(TF1, TF1)
UL_TFC5	(TF2, TF1)

Downlink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF0, TF1)
DL_TFC4	(TF1, TF1)
DL_TFC5	(TF2, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, UL_TFC0 DL_TFC3,UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, UL_TFC0 DL_TFC3 ,UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 632	RB5: 632
NOTE1: UL_TFC0, UL_TFC1 and UL_TFC3 are part of minimum set of TFCs. NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. For 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 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).						

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See 14.1.1 for test procedure.

14.2.23d.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.
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).
3. At step 15 the UE shall return
 - for sub-test 1 to 2: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.24 Void

14.2.25 Interactive or background / UL:32 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.25.1 Interactive or background / UL:32 DL: 64 kbps / PS RAB / (TC, 10 ms TTI)

14.2.25.1.1 Conformance requirement

See 14.2.4.1.

14.2.25.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.25 for the uplink turbo channel coding and 10 ms TTI case.

14.2.25.1.3 Method of test

Uplink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF0, TF1)
UL_TFC3	(TF1, TF1)

Downlink 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

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_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 952	RB5: 952
4	DL_TFC4	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 1272	RB5: 1272

[NOTE 1:](#) UL_TFC0, UL_TFC1 and UL_TFC2 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.

14.2.25.1.4 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 to 4: RB5/TF1 (1x336).
3. At step 15 the UE shall return
 - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.25.2 Interactive or background / UL:32 DL: 64 kbps / PS RAB / (TC, 20 ms TTI)

14.2.25.2.1 Conformance requirement

See 14.2.4.1.

14.2.25.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.25 for the uplink turbo channel coding and 20 ms TTI case.

14.2.25.2.3 Method of test

Uplink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF0, TF1)
UL_TFC4	(TF1, TF1)
UL_TFC5	(TF2, TF1)

Downlink 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

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_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 952	RB5: 952
4	DL_TFC4	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 1272	RB5: 1272
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC3 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</p>						

See 14.1.1 for test procedure.

14.2.25.2.4 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/TF1 (1x336).
 - for sub-test 4: RB5/TF2 (2x336).
3. At step 15 the UE shall return
 - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.25.3 Interactive or background / UL:32 DL:64 kbps / PS RAB / (CC, 10 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.25 for the uplink convolutional channel coding and 10 ms TTI case.

See test case 14.2.25.1 for test procedure and test requirement.

14.2.25.4 Interactive or background / UL:32 DL:64 kbps / PS RAB / (CC, 20 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.25 for the uplink convolutional channel coding and 20 ms TTI case.

See test case 14.2.25.2 for test procedure and test requirement.

14.2.26 Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.26.1 Conformance requirement

See 14.2.4.1.

14.2.26.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.26.

14.2.26.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps, 20 ms TTI)	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 (64 kbps, 20 ms TTI)	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

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: 952	RB5: 952
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	RB5: 1272

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 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.

See 14.1.1 for test procedure.

14.2.26.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

- 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 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.27 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.27.1 Conformance requirement

See 14.2.4.1.

14.2.27.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.27.

14.2.27.3 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 (128 kbps)	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.

14.2.27.4 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.

14.2.28 Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.28.1 Conformance requirement

See 14.2.4.1.

14.2.28.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.28.

14.2.28.3 Method of test

Uplink TFS:

	TFI	RB5 (128 kbps)	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

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 (128 kbps)	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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
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: 1272	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

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.

See 14.1.1 for test procedure.

14.2.28.4 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).

3. At step 15 the UE shall return

- for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.29 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.29.1 Conformance requirement

See 14.2.4.1.

14.2.29.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.29.

14.2.29.3 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 (144 kbps)	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	9x336	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_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, 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_TFC6, 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_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2872
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 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.						

See 14.1.1 for test procedure.

14.2.29.4 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 (4x336) or RB5/TF1 (1x336).
- for sub-test 4: RB5/TF4 (8x336) or RB5/TF1 (1x336).
- for sub-test 5: RB5/TF3 (4x336) or RB5/TF1 (1x336).

3. At step 15 the UE shall return

- for sub-test 1, 2, 4 and 5: 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.

14.2.30 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.30.1 Conformance requirement

See 14.2.4.1.

14.2.30.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.30.

14.2.30.3 Method of test

Uplink TFS:

	TFI	RB5 (144 kbps)	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	9x336	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 (144 kbps)	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	9x336	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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	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: 2872	RB5: 2872

NOTE1: UL_TFC0, UL_TFC1 and UL_TFC6 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.

See 14.1.1 for test procedure.

14.2.30.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

- 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/TF5 (9x336).
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.

14.2.31 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

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 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.

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 TFCs (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 TFCs.
NOTE2: 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.

14.2.31.2.4 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-test 1 to 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.32 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.32.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.2.32.1.1 Conformance requirement

See 14.2.4.1.

14.2.32.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.32 for the 10 ms TTI case.

14.2.32.1.3 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 (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 TFCs (note 1)	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, 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_TFC6, 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_TFC6, 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_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>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.</p>						

See 14.1.1 for test procedure.

14.2.32.1.4 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 and 5: RB5/TF4 (4x336) or RB5/TF1 (1x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 and 5: 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.

14.2.32.2 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.
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-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.33 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.33.1 Interactive or background / UL:128 DL:384 kbps / PS RAB / 10 ms TTI

14.2.33.1.1 Conformance requirement

See 14.2.4.1.

14.2.33.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.33 for the 10 ms TTI case.

14.2.33.1.3 Method of test

Uplink TFS:

	TFI	RB5 (128 kbps)	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

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, 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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, 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_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 3832	RB5: 3832

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.

The UL RLC SDU size have been chosen 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.

See 14.1.1 for test procedure.

14.2.33.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

- At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
- 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 and 5: RB5/TF4 (8x336).

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.

14.2.33.2 Interactive or background / UL:128 DL:384 kbps / PS RAB / 20 ms TTI

14.2.33.2.1 Conformance requirement

See 14.2.4.1.

14.2.33.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.33 for the 20 ms TTI case.

14.2.33.2.3 Method of test

Uplink TFS:

	TFI	RB5 (128 kbps)	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

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 TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
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: 1272	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_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5,	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	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_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	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
<p>NOTE1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>NOTE2: 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.</p>						

See 14.1.1 for test procedure.

14.2.33.2.4 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 (4x336).
 - for sub-test 4 to 8: RB5/TF4 (8x336).

3. At step 15 the UE shall return

- for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.34 Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

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_TFC7, UL_TFC6	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.

14.2.34.2 Interactive or background / UL:384 DL:384 kbps / PS RAB / 20 ms TTI

14.2.34.2.1 Conformance requirement

See 14.2.4.1.

14.2.34.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.34. for the 20 ms TTI case

14.2.34.2.3 Method of test

Uplink 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

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	(TF6, TF0)
UL_TFC7	(TF7, TF0)
UL_TFC8	(TF8, TF0)
UL_TFC9	(TF0, TF1)
UL_TFC10	(TF1, TF1)
UL_TFC11	(TF2, TF1)
UL_TFC12	(TF3, TF1)
UL_TFC13	(TF4, TF1)
UL_TFC14	(TF5, TF1)
UL_TFC15	(TF6, TF1)
UL_TFC16	(TF7, TF1)
UL_TFC17	(TF8, 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 TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC9, UL_TFC10	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC9, UL_TFC11	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC3, UL_TFC9, UL_TFC12	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC9, UL_TFC13	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC5, UL_TFC9, UL_TFC14	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC6, UL_TFC9, UL_TFC15	RB5: 5112	RB5: 5112
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC7, UL_TFC9, UL_TFC16	RB5: 6392	RB5: 6392
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC8, UL_TFC9, UL_TFC17	RB5: 7672	RB5: 7672
NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC9 are part of minimum set of TFCs.						
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.

14.2.34.2.4 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 (4x336).
 - for sub-test 4: RB5/TF4 (8x336).
 - for sub-test 5: RB5/TF5 (12x336).

- for sub-test 6: RB5/TF6 (16x336).
- for sub-test 7: RB5/TF7 (20x336).
- for sub-test 8: RB5/TF8 (24x336).

3. At step 15 the UE shall return

- for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.35 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

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 TFCs (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
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>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.</p>						

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-test 1 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

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
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>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.</p>						

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-test 1 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.36 Void

14.2.37 Void

14.2.38 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB +
Interactive or background / UL:32 DL:8 kbps / PS RAB + UL:3.4
DL:3.4 kbps SRBs for DCCH

14.2.38.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or
background / UL:32 DL:8 kbps / PS RAB / (TC, 20 ms TTI)

14.2.38.1.1 Conformance requirement

See 14.2.4.1.

14.2.38.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38 for the turbo channel coding and 20 ms TTI case.

14.2.38.1.3 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 (32 kbps)	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

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, TF0, TF1)
UL_TFC10	(TF1, TF0, TF0, TF0, TF1)
UL_TFC11	(TF2, TF1, TF1, TF0, TF1)
UL_TFC12	(TF0, TF0, TF0, TF1, TF1)
UL_TFC13	(TF1, TF0, TF0, TF1, TF1)
UL_TFC14	(TF2, TF1, TF1, TF1, TF1)
UL_TFC15	(TF0, TF0, TF0, TF2, TF1)
UL_TFC16	(TF1, TF0, TF0, TF2, TF1)
UL_TFC17	(TF2, TF1, TF1, TF2, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (8 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1, TF0, TF1)
DL_TFC9	(TF0, TF0, TF0, TF1, TF1)
DL_TFC10	(TF1, TF0, TF0, TF1, TF1)
DL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1 DL_TFC7	UL_TFC1 UL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3 , UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2 DL_TFC8	UL_TFC2 UL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3 , UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3 DL_TFC9	UL_TFC3 UL_TFC12	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3, UL_TFC9, UL_TFC12	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4 DL_TFC10	UL_TFC4 UL_TFC13	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3, UL_TFC4, UL_TFC9, UL_TFC10, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5 DL_TFC11	UL_TFC5 UL_TFC14	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC9, UL_TFC11, UL_TFC12, UL_TFC14	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC3 DL_TFC9	UL_TFC6 UL_TFC15	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3 , UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 312
7	DL_TFC4 DL_TFC10	UL_TFC7 UL_TFC16	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3 , UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 312
8	DL_TFC5 DL_TFC11	UL_TFC8 UL_TFC17	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3 , UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 312

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
<u>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC9 are part of minimum set of TFCs.</u>						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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 uplink TTI for RB8 is 20 ms while the downlink TTI is 40 ms then, to achieve continous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over two subsequent TTIs, i.e. UL RLC SDU SIZE has been set to two times the uplink TFS size minus 8 (the size of a 7 bit length indicator and expansion bit).						

14.2.38.1.4 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 TFCs as specified for the actual sub test.
3. At step 15 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 and RB8.
 - 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.
 - for sub-test 3 and 6: an RLC SDU on RB8 having the first 312 bits equal to the content sent by the SS in the downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4 and 7: an RLC SDU on RB5 having the same content as sent by SS and on RB8 having the first 312 bits equal to the content sent by the SS in the downlink; and no data shall be received on RB6 and RB7.
 - for sub-test 5 and 8: an RLC SDU on RB5, RB6, RB7 having the same content as sent by SS and on RB8 having the first 312 bits equal to the content sent by the SS in the downlink.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB / (TC, 10 ms TTI)

14.2.38.2.1 Conformance requirement

See 14.2.4.1.

14.2.38.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38 for the turbo channel coding and 10 ms TTI case.

14.2.38.2.3 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 (32 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	N/A	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, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1, TF0, TF1)
UL_TFC9	(TF0, TF0, TF0, TF1, TF1)
UL_TFC10	(TF1, TF0, TF0, TF1, TF1)
UL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (8 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1, TF0, TF1)
DL_TFC9	(TF0, TF0, TF0, TF1, TF1)
DL_TFC10	(TF1, TF0, TF0, TF1, TF1)
DL_TFC11	(TF2, TF1, 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_TFC7	UL_TFC1 UL_TFC7	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3 , UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2 DL_TFC8	UL_TFC2 UL_TFC8	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3 , UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3 DL_TFC9	UL_TFC3 UL_TFC9	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4 DL_TFC10	UL_TFC4 UL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 1272	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5 DL_TFC11	UL_TFC5 UL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 312
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC6 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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 uplink TTI for RB8 is 10 ms while the downlink TTI is 40 ms then, to achieve continous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over four subsequent TTIs, i.e. UL RLC SDU SIZE has been set to four times the uplink TFS size minus 8 (the size of a 7 bit length indicator and expansion bit).</p>						

14.2.38.2.4 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 15 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 and RB8.
 - 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.

- for sub-test 3: an RLC SDU on RB8 having the first 312 bits equal to the content sent by the SS in the downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 4: an RLC SDU on RB5 having the same content as sent by SS and on RB8 having the first 312 bits equal to the content sent by the SS in the downlink; and no data shall be received on RB6 and RB7.
- for sub-test 5: an RLC SDU on RB5, RB6, RB7 having the same content as sent by SS and on RB8 having the first 312 bits equal to the content sent by the SS in the downlink.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB / (CC, 20 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38 for the convolutional channel coding and 20 ms TTI case.

See test case 14.2.38.1 for test procedure and test requirement.

14.2.38.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:8 kbps / PS RAB / (CC, 10 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38 for the convolutional channel coding and 10 ms TTI case.

See test case 14.2.38.2 for test procedure and test requirement.

14.2.38a Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38a.1 Conformance requirement

See 14.2.4.1.

14.2.38a.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38a.

14.2.38a.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 (0 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	N/A	1x148
	TF2, bits	1x81	N/A	N/A	N/A	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, TF0, TF1)
UL_TFC4	(TF1, TF0, TF0, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1, TF0, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (0 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	N/A	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF0, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCS (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1 DL_TFC4	UL_TFC1 UL_TFC4	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4	RB5: 39 RB6: 103 RB7: 60 RB8: 0	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2 DL_TFC5	UL_TFC2 UL_TFC5	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 81 RB6: 103 RB7: 60 RB8: 0	RB5: 81 RB6: 103 RB7: 60 RB8: No data

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2 and UL_TFC3 are part of minimum set of TFCSs.
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

14.2.38a.4 Test requirements

See 14.1.2 for definition of step 10 and step 15.

- At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.
- At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCSs as specified for the actual sub-test.
- 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 and RB8.
 - 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.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38b Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38b.1 Conformance requirement

See 14.2.4.1.

14.2.38b.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38b.

14.2.38b.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 (8 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	N/A	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, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1, TF0, TF1)
UL_TFC9	(TF0, TF0, TF0, TF1, TF1)
UL_TFC10	(TF1, TF0, TF0, TF1, TF1)
UL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (8 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1, TF0, TF1)
DL_TFC9	(TF0, TF0, TF0, TF1, TF1)
DL_TFC10	(TF1, TF0, TF0, TF1, TF1)
DL_TFC11	(TF2, TF1, 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_TFC7	UL_TFC1 UL_TFC7	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2 DL_TFC8	UL_TFC2 UL_TFC8	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3 DL_TFC9	UL_TFC3 UL_TFC9	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4 DL_TFC10	UL_TFC4 UL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5 DL_TFC11	UL_TFC5 UL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC6 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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).</p>						

14.2.38b.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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38c Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38c.1 Conformance requirement

See 14.2.4.1.

14.2.38c.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38c.

14.2.38c.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 (32 kbps)	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)	RB8 (32 kbps)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 (note 1)	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	RB5: 39 RB6: No data RB7: No data RB8: 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	RB5: 81 RB6: 103 RB7: 60 RB8: 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: 81 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC15, DL_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	RB5: 39 RB6: No data RB7: No data RB8: 312
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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
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: 81 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
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	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
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: 81 RB6: 103 RB7: 60 RB8: 952	RB5: No data RB6: No data RB7: No data RB8: 952
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	RB5: 39 RB6: No data RB7: No data RB8: 952
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	RB5: 81 RB6: 103 RB7: 60 RB8: 952
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: 81 RB6: 103 RB7: 60 RB8: 1272	RB5: No data RB6: No data RB7: No data RB8: 1272
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	RB5: 39 RB6: No data RB7: No data RB8: 1272
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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, , UL_TFC3 and UL_TFC15 are part of minimum set of TFCs. NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).						

14.2.38c.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 TFCs 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 and RB8.
 - 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.
 - 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 and RB7.
 - 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 and RB7.
 - 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.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

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 TFCs (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 and 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 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.

14.2.38e Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:0 DL:0 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38e.1 Conformance requirement

See 14.2.4.1.

14.2.38e.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38e.

14.2.38e.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 (0 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	N/A	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A

	TF5, bits	1x81	N/A	N/A	N/A	N/A
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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, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF1, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF0, TF0, TF1)
UL_TFC9	(TF3, TF2, TF0, TF0, TF1)
UL_TFC10	(TF4, TF3, TF0, TF0, TF1)
UL_TFC11	(TF5, TF1, TF1, TF0, TF1)

Downlink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (0 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	N/A	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0, TF0)
DL_TFC5	(TF5, TF1, TF1, TF0, TF0)
DL_TFC6	(TF0, TF0, TF0, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF0, TF0, TF1)
DL_TFC9	(TF3, TF2, TF0, TF0, TF1)
DL_TFC10	(TF4, TF3, TF0, TF0, TF1)
DL_TFC11	(TF5, TF1, TF1, TF0, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1, DL_TFC7	UL_TFC1, UL_TFC7	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 0 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC8	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 0 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
3	DL_TFC3, DL_TFC9	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 0 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data
4	DL_TFC4, DL_TFC10	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 0 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
5	DL_TFC5, DL_TFC11	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 0 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5 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.						

14.2.38e.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 RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
- for sub-test 2,3 and 4: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
- for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38f Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38f.1 Conformance requirement

See clause 14.2.4.1.

14.2.38f.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38f.

14.2.38f.3 Method of test

See clause 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (8 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	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, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF0, TF1)
UL_TFC13	(TF1, TF0, TF0, TF0, TF1)
UL_TFC14	(TF2, TF1, TF0, TF0, TF1)
UL_TFC15	(TF3, TF2, TF0, TF0, TF1)
UL_TFC16	(TF4, TF3, TF0, TF0, TF1)
UL_TFC17	(TF5, TF4, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF0, TF1, TF1)
UL_TFC21	(TF3, TF2, TF0, TF1, TF1)
UL_TFC22	(TF4, TF3, TF0, TF1, TF1)
UL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (8 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF1,TF0,TF0,TF0,TF0)
DL_TFC2	(TF2,TF1,TF0,TF0,TF0)
DL_TFC3	(TF3,TF2,TF0,TF0,TF0)
DL_TFC4	(TF4,TF3,TF0,TF0,TF0)
DL_TFC5	(TF5,TF4,TF1,TF0,TF0)
DL_TFC6	(TF0,TF0,TF0,TF1,TF0)
DL_TFC7	(TF1,TF0,TF0,TF1,TF0)
DL_TFC8	(TF2,TF1,TF0,TF1,TF0)
DL_TFC9	(TF3,TF2,TF0,TF1,TF0)
DL_TFC10	(TF4,TF3,TF0,TF1,TF0)
DL_TFC11	(TF5,TF4,TF1,TF1,TF0)
DL_TFC12	(TF0,TF0,TF0,TF0,TF1)
DL_TFC13	(TF1,TF0,TF0,TF0,TF1)
DL_TFC14	(TF2,TF1,TF0,TF0,TF1)
DL_TFC15	(TF3,TF2,TF0,TF0,TF1)
DL_TFC16	(TF4,TF3,TF0,TF0,TF1)
DL_TFC17	(TF5,TF4,TF1,TF0,TF1)
DL_TFC18	(TF0,TF0,TF0,TF1,TF1)
DL_TFC19	(TF1,TF0,TF0,TF1,TF1)
DL_TFC20	(TF2,TF1,TF0,TF1,TF1)
DL_TFC21	(TF3,TF2,TF0,TF1,TF1)
DL_TFC22	(TF4,TF3,TF0,TF1,TF1)
DL_TFC23	(TF5,TF4,TF1,TF1,TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (note 2)	Test data size (note 2)
1	DL_TFC1, DL_TFC13	UL_TFC1, UL_TFC13	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC13	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC14	UL_TFC2, UL_TFC14	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC14	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
3	DL_TFC3, DL_TFC15	UL_TFC3, UL_TFC15	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC15	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data
4	DL_TFC4, DL_TFC16	UL_TFC4, UL_TFC16	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC16	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
5	DL_TFC5, DL_TFC17	UL_TFC5, UL_TFC17	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC17	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
6	DL_TFC6, DL_TFC18	UL_TFC6, UL_TFC18	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC18	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: No data RB6: No data RB7: No data RB8: 312 bits

7	DL_TFC7, DL_TFC19	UL_TFC7, UL_TFC19	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC12, UL_TFC13, UL_TFC18, UL_TFC19	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 312 bits
8	DL_TFC8, DL_TFC20	UL_TFC8, UL_TFC20	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC12, UL_TFC14, UL_TFC18, UL_TFC20	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 312 bits
9	DL_TFC9, DL_TFC21	UL_TFC9, UL_TFC21	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC12, UL_TFC15, UL_TFC18, UL_TFC21	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 312 bits
10	DL_TFC10, DL_TFC22	UL_TFC10, UL_TFC22	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC12, UL_TFC16, UL_TFC18, UL_TFC22	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 312 bits
11	DL_TFC11, DL_TFC23	UL_TFC11, UL_TFC23	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC12, UL_TFC17, UL_TFC18, UL_TFC23	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC12 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).</p>						

14.2.38f.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 15 the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2,3 and 4: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.
 - for sub-test 6: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8,9 and 10: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
 - for sub-test 11: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38g Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:16 DL:16 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38g.1 Conformance requirement

See clause 14.2.4.1.

14.2.38g.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38g.

14.2.38g.3 Method of test

See clause 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (16 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	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, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF3, TF2, TF0, TF1, TF0)
UL_TFC9	(TF4, TF3, TF0, TF1, TF0)
UL_TFC10	(TF5, TF4, TF1, TF1, TF0)
UL_TFC11	(TF0, TF0, TF0, TF2, TF0)
UL_TFC12	(TF1, TF0, TF0, TF2, TF0)
UL_TFC13	(TF3, TF2, TF0, TF2, TF0)
UL_TFC14	(TF4, TF3, TF0, TF2, TF0)
UL_TFC15	(TF5, TF4, TF1, TF2, TF0)
UL_TFC16	(TF0, TF0, TF0, TF0, TF1)
UL_TFC17	(TF1, TF0, TF0, TF0, TF1)
UL_TFC18	(TF2, TF1, TF0, TF0, TF1)
UL_TFC19	(TF3, TF2, TF0, TF0, TF1)
UL_TFC20	(TF4, TF3, TF0, TF0, TF1)
UL_TFC21	(TF5, TF4, TF1, TF0, TF1)
UL_TFC22	(TF0, TF0, TF0, TF1, TF1)
UL_TFC23	(TF1, TF0, TF0, TF1, TF1)
UL_TFC24	(TF3, TF2, TF0, TF1, TF1)
UL_TFC25	(TF4, TF3, TF0, TF1, TF1)
UL_TFC26	(TF5, TF4, TF1, TF1, TF1)
UL_TFC27	(TF0, TF0, TF0, TF2, TF1)
UL_TFC28	(TF1, TF0, TF0, TF2, TF1)
UL_TFC29	(TF3, TF2, TF0, TF2, TF1)
UL_TFC30	(TF4, TF3, TF0, TF2, TF1)
UL_TFC31	(TF5, TF4, TF1, TF2, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (16 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF1,TF0,TF0,TF0,TF0)
DL_TFC2	(TF2,TF1,TF0,TF0,TF0)
DL_TFC3	(TF3,TF2,TF0,TF0,TF0)
DL_TFC4	(TF4,TF3,TF0,TF0,TF0)
DL_TFC5	(TF5,TF4,TF1,TF0,TF0)
DL_TFC6	(TF0,TF0,TF0,TF1,TF0)
DL_TFC7	(TF1,TF0,TF0,TF1,TF0)
DL_TFC8	(TF2,TF1,TF0,TF1,TF0)
DL_TFC9	(TF3,TF2,TF0,TF1,TF0)
DL_TFC10	(TF4,TF3,TF0,TF1,TF0)
DL_TFC11	(TF5,TF4,TF1,TF1,TF0)
DL_TFC12	(TF0,TF0,TF0,TF2,TF0)
DL_TFC13	(TF1,TF0,TF0,TF2,TF0)
DL_TFC14	(TF2,TF1,TF0,TF2,TF0)
DL_TFC15	(TF3,TF2,TF0,TF2,TF0)
DL_TFC16	(TF4,TF3,TF0,TF2,TF0)
DL_TFC17	(TF5,TF4,TF1,TF2,TF0)
DL_TFC18	(TF0,TF0,TF0,TF0,TF1)
DL_TFC19	(TF1,TF0,TF0,TF0,TF1)
DL_TFC20	(TF2,TF1,TF0,TF0,TF1)
DL_TFC21	(TF3,TF2,TF0,TF0,TF1)
DL_TFC22	(TF4,TF3,TF0,TF0,TF1)
DL_TFC23	(TF5,TF4,TF1,TF0,TF1)
DL_TFC24	(TF0,TF0,TF0,TF1,TF1)
DL_TFC25	(TF1,TF0,TF0,TF1,TF1)
DL_TFC26	(TF2,TF1,TF0,TF1,TF1)
DL_TFC27	(TF3,TF2,TF0,TF1,TF1)
DL_TFC28	(TF4,TF3,TF0,TF1,TF1)
DL_TFC29	(TF5,TF4,TF1,TF1,TF1)
DL_TFC30	(TF0,TF0,TF0,TF2,TF1)
DL_TFC31	(TF1,TF0,TF0,TF2,TF1)
DL_TFC32	(TF2,TF1,TF0,TF2,TF1)
DL_TFC33	(TF3,TF2,TF0,TF2,TF1)
DL_TFC34	(TF4,TF3,TF0,TF2,TF1)
DL_TFC35	(TF5,TF4,TF1,TF2,TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (note 2)	Test data size (note 2)
1	DL_TFC1, DL_TFC19	UL_TFC1, UL_TFC17	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC17	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC20	UL_TFC2, UL_TFC18	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC18	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
3	DL_TFC3, DL_TFC21	UL_TFC3, UL_TFC19	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC19	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data
4	DL_TFC4, DL_TFC22	UL_TFC4, UL_TFC20	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC20	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
5	DL_TFC5, DL_TFC23	UL_TFC5, UL_TFC21	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC21	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
6	DL_TFC6, DL_TFC24	UL_TFC6, UL_TFC22	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC16, UL_TFC22	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: No data RB6: No data RB7: No data RB8: 312 bits

7	DL_TFC7, DL_TFC25	UL_TFC7, UL_TFC23	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC16, UL_TFC17, UL_TFC22, UL_TFC23	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 312 bits
8	DL_TFC8, DL_TFC26	UL_TFC8, UL_TFC24	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC16, UL_TFC19, UL_TFC22, UL_TFC24	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 312 bits
9	DL_TFC9, DL_TFC27	UL_TFC8, UL_TFC24	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC16, UL_TFC19, UL_TFC22, UL_TFC24	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 312 bits
10	DL_TFC10, DL_TFC28	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC16, UL_TFC20, UL_TFC22, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 312 bits
11	DL_TFC11, DL_TFC29	UL_TFC10, UL_TFC26	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC16, UL_TFC21, UL_TFC22, UL_TFC26	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits

12	DL_TFC12, DL_TFC30	UL_TFC11, UL_TFC27	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC16, UL_TFC27	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: No data RB6: No data RB7: No data RB8: 632 bits
13	DL_TFC13, DL_TFC31	UL_TFC12, UL_TFC28	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC27, UL_TFC28	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 632 bits
14	DL_TFC14, DL_TFC32	UL_TFC13, UL_TFC29	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC13, UL_TFC16, UL_TFC19, UL_TFC27, UL_TFC29	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 632 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 632 bits
15	DL_TFC15, DL_TFC33	UL_TFC13, UL_TFC29	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC13, UL_TFC16, UL_TFC19, UL_TFC27, UL_TFC29	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 632 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 632 bits
16	DL_TFC16, DL_TFC34	UL_TFC14, UL_TFC30	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC14, UL_TFC16, UL_TFC20, UL_TFC27, UL_TFC30	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 632 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 632 bits

17	DL_TFC17, DL_TFC35	UL_TFC15, UL_TFC31	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC15, UL_TFC16, UL_TFC21, UL_TFC27, UL_TFC31	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC16 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).</p>						

14.2.38g.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 15 the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2,3 and 4: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.
 - for sub-test 6: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: RLC SDUs on RB5 having the first 42 bits equal to the content of the test data sent by the SS in downlink ; RLC SDUs on RB6 having the first 53 bits equal to the content of the test data sent by the SS in downlink ; RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB7.
 - for sub-test 9 and 10: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
 - for sub-test 11: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.

- for sub-test 12: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 13: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 14: RLC SDUs on RB5 having the first 42 bits equal to the content of the test data sent by the SS in downlink ; RLC SDUs on RB6 having the first 53 bits equal to the content of the test data sent by the SS in downlink ; RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 15 and 16: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 17: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38h Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38h.1 Conformance requirement

See clause 14.2.4.1.

14.2.38h.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38h.

14.2.38h.3 Method of test

See clause 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (32 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	3x336	N/A
	TF4, bits	1x75	1x103	N/A	4x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF0, TF0, TF0, TF1, TF0)
UL_TFC2	(TF0, TF0, TF0, TF2, TF0)
UL_TFC3	(TF0, TF0, TF0, TF4, TF0)
UL_TFC4	(TF5, TF4, TF1, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF1, TF0)
UL_TFC6	(TF5, TF4, TF1, TF2, TF0)
UL_TFC7	(TF5, TF4, TF1, TF4, TF0)
UL_TFC8	(TF4, TF3, TF0, TF0, TF0)
UL_TFC9	(TF4, TF3, TF0, TF1, TF0)
UL_TFC10	(TF3, TF2, TF0, TF0, TF0)
UL_TFC11	(TF2, TF1, TF0, TF0, TF0)
UL_TFC12	(TF1, TF0, TF0, TF0, TF0)
UL_TFC13	(TF1, TF0, TF0, TF1, TF0)
UL_TFC14	(TF1, TF0, TF0, TF2, TF0)
UL_TFC15	(TF1, TF0, TF0, TF4, TF0)
UL_TFC16	(TF0, TF0, TF0, TF0, TF1)
UL_TFC17	(TF0, TF0, TF0, TF1, TF1)
UL_TFC18	(TF0, TF0, TF0, TF2, TF1)
UL_TFC19	(TF0, TF0, TF0, TF4, TF1)
UL_TFC20	(TF5, TF4, TF1, TF0, TF1)
UL_TFC21	(TF5, TF4, TF1, TF1, TF1)
UL_TFC22	(TF5, TF4, TF1, TF2, TF1)
UL_TFC23	(TF5, TF4, TF1, TF4, TF1)
UL_TFC24	(TF4, TF3, TF0, TF0, TF1)
UL_TFC25	(TF4, TF3, TF0, TF1, TF1)
UL_TFC26	(TF3, TF2, TF0, TF0, TF1)
UL_TFC27	(TF2, TF1, TF0, TF0, TF1)
UL_TFC28	(TF1, TF0, TF0, TF0, TF1)
UL_TFC29	(TF1, TF0, TF0, TF1, TF1)
UL_TFC30	(TF1, TF0, TF0, TF2, TF1)
UL_TFC31	(TF1, TF0, TF0, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (32 kbps, 40 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	3x336	N/A
	TF4, bits	1x75	1x103	N/A	4x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF0,TF0,TF0,TF1,TF0)
DL_TFC2	(TF0,TF0,TF0,TF2,TF0)
DL_TFC3	(TF0,TF0,TF0,TF4,TF0)
DL_TFC4	(TF5,TF4,TF1,TF0,TF0)
DL_TFC5	(TF5,TF4,TF1,TF1,TF0)
DL_TFC6	(TF5,TF4,TF1,TF2,TF0)
DL_TFC7	(TF5,TF4,TF1,TF4,TF0)
DL_TFC8	(TF4,TF3,TF0,TF0,TF0)
DL_TFC9	(TF4,TF3,TF0,TF1,TF0)
DL_TFC10	(TF4,TF3,TF0,TF2,TF0)
DL_TFC11	(TF4,TF3,TF0,TF4,TF0)
DL_TFC12	(TF3,TF2,TF0,TF0,TF0)
DL_TFC13	(TF3,TF2,TF0,TF1,TF0)
DL_TFC14	(TF3,TF2,TF0,TF2,TF0)
DL_TFC15	(TF3,TF2,TF0,TF4,TF0)
DL_TFC16	(TF2,TF1,TF0,TF0,TF0)
DL_TFC17	(TF2,TF1,TF0,TF1,TF0)
DL_TFC18	(TF2,TF1,TF0,TF2,TF0)
DL_TFC19	(TF2,TF1,TF0,TF4,TF0)
DL_TFC20	(TF1,TF0,TF0,TF0,TF0)
DL_TFC21	(TF1,TF0,TF0,TF1,TF0)
DL_TFC22	(TF1,TF0,TF0,TF2,TF0)
DL_TFC23	(TF1,TF0,TF0,TF4,TF0)
DL_TFC24	(TF0,TF0,TF0,TF0,TF1)
DL_TFC25	(TF0,TF0,TF0,TF1,TF1)
DL_TFC26	(TF0,TF0,TF0,TF2,TF1)
DL_TFC27	(TF0,TF0,TF0,TF4,TF1)
DL_TFC28	(TF5,TF4,TF1,TF0,TF1)
DL_TFC29	(TF5,TF4,TF1,TF1,TF1)
DL_TFC30	(TF5,TF4,TF1,TF2,TF1)
DL_TFC31	(TF5,TF4,TF1,TF4,TF1)
DL_TFC32	(TF4,TF3,TF0,TF0,TF1)
DL_TFC33	(TF4,TF3,TF0,TF1,TF1)
DL_TFC34	(TF4,TF3,TF0,TF2,TF1)
DL_TFC35	(TF4,TF3,TF0,TF4,TF1)
DL_TFC36	(TF3,TF2,TF0,TF0,TF1)
DL_TFC37	(TF3,TF2,TF0,TF1,TF1)
DL_TFC38	(TF3,TF2,TF0,TF2,TF1)
DL_TFC39	(TF3,TF2,TF0,TF4,TF1)
DL_TFC40	(TF2,TF1,TF0,TF0,TF1)
DL_TFC41	(TF2,TF1,TF0,TF1,TF1)
DL_TFC42	(TF2,TF1,TF0,TF2,TF1)
DL_TFC43	(TF2,TF1,TF0,TF4,TF1)
DL_TFC44	(TF1,TF0,TF0,TF0,TF1)
DL_TFC45	(TF1,TF0,TF0,TF1,TF1)
DL_TFC46	(TF1,TF0,TF0,TF2,TF1)
DL_TFC47	(TF1,TF0,TF0,TF4,TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (note 2)	Test data size (note 2)
1	DL_TFC1, DL_TFC25	UL_TFC1, UL_TFC17	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: No data RB6: No data RB7: No data RB8: 312
2	DL_TFC2, DL_TFC26	UL_TFC2, UL_TFC18	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC18	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: No data RB6: No data RB7: No data RB8: 632
3	DL_TFC3, DL_TFC27	UL_TFC3, UL_TFC19	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC19	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: No data RB6: No data RB7: No data RB8: 1272
4	DL_TFC4, DL_TFC28	UL_TFC4, UL_TFC20	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC20	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
5	DL_TFC5, DL_TFC29	UL_TFC5, UL_TFC21	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC20, UL_TFC21	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits
6	DL_TFC6, DL_TFC30	UL_TFC6, UL_TFC22	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC18, UL_TFC20, UL_TFC22	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits

7	DL_TFC7, DL_TFC31	UL_TFC7, UL_TFC23	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC7, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC19, UL_TFC20, UL_TFC23	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits
8	DL_TFC8, DL_TFC32	UL_TFC8, UL_TFC24	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC24	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
9	DL_TFC9, DL_TFC33	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 312 bits
10	DL_TFC10, DL_TFC34	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 632 bits
11	DL_TFC11, DL_TFC35	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 1272 bits
12	DL_TFC12, DL_TFC36	UL_TFC10, UL_TFC26	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC10, UL_TFC16, UL_TFC26	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data

13	DL_TFC13, DL_TFC37	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 312 bits
14	DL_TFC14, DL_TFC38	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 632 bits
15	DL_TFC15, DL_TFC39	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 1272 bits
16	DL_TFC16, DL_TFC40	UL_TFC11, UL_TFC27	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC27	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
17	DL_TFC17, DL_TFC41	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 312 bits

18	DL_TFC18, DL_TFC42	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 632 bits
19	DL_TFC19, DL_TFC43	UL_TFC9, UL_TFC25	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC9, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC17, UL_TFC24, UL_TFC25	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 1272 bits
20	DL_TFC20, DL_TFC44	UL_TFC12, UL_TFC28	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC16, UL_TFC28	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
21	DL_TFC21, DL_TFC45	UL_TFC13, UL_TFC29	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC13, UL_TFC16, UL_TFC17, UL_TFC28, UL_TFC29	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 312 bits
22	DL_TFC22, DL_TFC46	UL_TFC14, UL_TFC30	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC14, UL_TFC16, UL_TFC18, UL_TFC28, UL_TFC30	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 632 bits

23	DL_TFC23, DL_TFC47	UL_TFC15, UL_TFC31	DL_TFC0, DL_TFC24, UL_TFC0, UL_TFC16	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12, UL_TFC15, UL_TFC16, UL_TFC19, UL_TFC28, UL_TFC31	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 1272 bits
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC8, UL_TFC10, UL_TFC11, UL_TFC12 and UL_TFC16 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).</p>						

14.2. 38h.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 15 the UE shall return
 - for sub-test 1,2 and 3: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.
 - for sub-test 5, 6 and 7: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by the SS.
 - for sub-test 8: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
 - for sub-test 9: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
 - for sub-test 10 and 11: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; 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 RB7.

- for sub-test 12: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
- for sub-test 13: RLC SDUs on RB5 having the first 55 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB6 having the first 63 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 14 and 15: RLC SDUs on RB5 having the first 55 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB6 having the first 63 bits equal to the content of the test data sent by the SS in downlink; 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 RB7.
- for sub-test 16: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
- for sub-test 17: RLC SDUs on RB5 having the first 42 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB6 having the first 53 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 18 and 19: RLC SDUs on RB5 having the first 42 bits equal to the content of the test data sent by the SS in downlink; RLC SDUs on RB6 having the first 53 bits equal to the content of the test data sent by the SS in downlink; 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 RB7.
- for sub-test 20: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
- for sub-test 21, 22 and 23: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38i Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38i.1 Conformance requirement

See clause 14.2.4.1.

14.2.38i.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38i.

14.2.38i.3 Method of test

See clause 14.1.2 for test procedure.

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	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	3x336	N/A
	TF4, bits	1x75	1x103	N/A	4x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	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, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF2, TF0)
UL_TFC13	(TF1, TF0, TF0, TF2, TF0)
UL_TFC14	(TF2, TF1, TF0, TF2, TF0)
UL_TFC15	(TF3, TF2, TF0, TF2, TF0)
UL_TFC16	(TF4, TF3, TF0, TF2, TF0)
UL_TFC17	(TF5, TF4, TF1, TF2, TF0)
UL_TFC18	(TF0, TF0, TF0, TF4, TF0)
UL_TFC19	(TF1, TF0, TF0, TF4, TF0)
UL_TFC20	(TF2, TF1, TF0, TF4, TF0)
UL_TFC21	(TF3, TF2, TF0, TF4, TF0)
UL_TFC22	(TF4, TF3, TF0, TF4, TF0)
UL_TFC23	(TF5, TF4, TF1, TF4, TF0)
UL_TFC24	(TF0, TF0, TF0, TF0, TF1)
UL_TFC25	(TF1, TF0, TF0, TF0, TF1)
UL_TFC26	(TF2, TF1, TF0, TF0, TF1)
UL_TFC27	(TF3, TF2, TF0, TF0, TF1)
UL_TFC28	(TF4, TF3, TF0, TF0, TF1)
UL_TFC29	(TF5, TF4, TF1, TF0, TF1)
UL_TFC30	(TF0, TF0, TF0, TF1, TF1)
UL_TFC31	(TF1, TF0, TF0, TF1, TF1)
UL_TFC32	(TF2, TF1, TF0, TF1, TF1)
UL_TFC33	(TF3, TF2, TF0, TF1, TF1)
UL_TFC34	(TF4, TF3, TF0, TF1, TF1)
UL_TFC35	(TF5, TF4, TF1, TF1, TF1)
UL_TFC36	(TF0, TF0, TF0, TF2, TF1)
UL_TFC37	(TF1, TF0, TF0, TF2, TF1)
UL_TFC38	(TF2, TF1, TF0, TF2, TF1)
UL_TFC39	(TF3, TF2, TF0, TF2, TF1)
UL_TFC40	(TF4, TF3, TF0, TF2, TF1)
UL_TFC41	(TF5, TF4, TF1, TF2, TF1)
UL_TFC42	(TF0, TF0, TF0, TF4, TF1)
UL_TFC43	(TF1, TF0, TF0, TF4, TF1)
UL_TFC44	(TF2, TF1, TF0, TF4, TF1)
UL_TFC45	(TF3, TF2, TF0, TF4, TF1)
UL_TFC46	(TF4, TF3, TF0, TF4, TF1)
UL_TFC47	(TF5, TF4, TF1, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	3x336	N/A
	TF4, bits	1x75	1x103	N/A	4x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF1,TF0,TF0,TF0,TF0)
DL_TFC2	(TF2,TF1,TF0,TF0,TF0)
DL_TFC3	(TF3,TF2,TF0,TF0,TF0)
DL_TFC4	(TF4,TF3,TF0,TF0,TF0)
DL_TFC5	(TF5,TF4,TF1,TF0,TF0)
DL_TFC6	(TF0,TF0,TF0,TF1,TF0)
DL_TFC7	(TF1,TF0,TF0,TF1,TF0)
DL_TFC8	(TF2,TF1,TF0,TF1,TF0)
DL_TFC9	(TF3,TF2,TF0,TF1,TF0)
DL_TFC10	(TF4,TF3,TF0,TF1,TF0)
DL_TFC11	(TF5,TF4,TF1,TF1,TF0)
DL_TFC12	(TF0,TF0,TF0,TF2,TF0)
DL_TFC13	(TF1,TF0,TF0,TF2,TF0)
DL_TFC14	(TF2,TF1,TF0,TF2,TF0)
DL_TFC15	(TF3,TF2,TF0,TF2,TF0)
DL_TFC16	(TF4,TF3,TF0,TF2,TF0)
DL_TFC17	(TF5,TF4,TF1,TF2,TF0)
DL_TFC18	(TF0,TF0,TF0,TF3,TF0)
DL_TFC19	(TF1,TF0,TF0,TF3,TF0)
DL_TFC20	(TF2,TF1,TF0,TF3,TF0)
DL_TFC21	(TF3,TF2,TF0,TF3,TF0)
DL_TFC22	(TF4,TF3,TF0,TF3,TF0)
DL_TFC23	(TF5,TF4,TF1,TF3,TF0)
DL_TFC24	(TF0,TF0,TF0,TF4,TF0)
DL_TFC25	(TF1,TF0,TF0,TF4,TF0)
DL_TFC26	(TF2,TF1,TF0,TF4,TF0)
DL_TFC27	(TF3,TF2,TF0,TF4,TF0)
DL_TFC28	(TF4,TF3,TF0,TF4,TF0)
DL_TFC29	(TF5,TF4,TF1,TF4,TF0)
DL_TFC30	(TF0,TF0,TF0,TF0,TF1)
DL_TFC31	(TF1,TF0,TF0,TF0,TF1)
DL_TFC32	(TF2,TF1,TF0,TF0,TF1)
DL_TFC33	(TF3,TF2,TF0,TF0,TF1)
DL_TFC34	(TF4,TF3,TF0,TF0,TF1)
DL_TFC35	(TF5,TF4,TF1,TF0,TF1)
DL_TFC36	(TF0,TF0,TF0,TF1,TF1)
DL_TFC37	(TF1,TF0,TF0,TF1,TF1)
DL_TFC38	(TF2,TF1,TF0,TF1,TF1)
DL_TFC39	(TF3,TF2,TF0,TF1,TF1)
DL_TFC40	(TF4,TF3,TF0,TF1,TF1)
DL_TFC41	(TF5,TF4,TF1,TF1,TF1)
DL_TFC42	(TF0,TF0,TF0,TF2,TF1)
DL_TFC43	(TF1,TF0,TF0,TF2,TF1)
DL_TFC44	(TF2,TF1,TF0,TF2,TF1)
DL_TFC45	(TF3,TF2,TF0,TF2,TF1)
DL_TFC46	(TF4,TF3,TF0,TF2,TF1)
DL_TFC47	(TF5,TF4,TF1,TF2,TF1)
DL_TFC48	(TF0,TF0,TF0,TF3,TF1)
DL_TFC49	(TF1,TF0,TF0,TF3,TF1)
DL_TFC50	(TF2,TF1,TF0,TF3,TF1)
DL_TFC51	(TF3,TF2,TF0,TF3,TF1)
DL_TFC52	(TF4,TF3,TF0,TF3,TF1)
DL_TFC53	(TF5,TF4,TF1,TF3,TF1)
DL_TFC54	(TF0,TF0,TF0,TF4,TF1)
DL_TFC55	(TF1,TF0,TF0,TF4,TF1)
DL_TFC56	(TF2,TF1,TF0,TF4,TF1)
DL_TFC57	(TF3,TF2,TF0,TF4,TF1)
DL_TFC58	(TF4,TF3,TF0,TF4,TF1)
DL_TFC59	(TF5,TF4,TF1,TF4,TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (note 2)	Test data size (note 2)
1	DL_TFC1, DL_TFC31	UL_TFC1, UL_TFC25	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC25	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC32	UL_TFC2, UL_TFC26	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC26	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
3	DL_TFC3, DL_TFC33	UL_TFC3, UL_TFC27	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC27	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data
4	DL_TFC4, DL_TFC34	UL_TFC4, UL_TFC28	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC28	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
5	DL_TFC5, DL_TFC35	UL_TFC5, UL_TFC29	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC29	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
6	DL_TFC6, DL_TFC36	UL_TFC6, UL_TFC30	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC30	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: No data RB6: No data RB7: No data RB8: 312 bits

7	DL_TFC7, DL_TFC37	UL_TFC7, UL_TFC31	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC24, UL_TFC25, UL_TFC30, UL_TFC31	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 312 bits
8	DL_TFC8, DL_TFC38	UL_TFC8, UL_TFC32	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC24, UL_TFC26, UL_TFC30, UL_TFC32	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 312 bits
9	DL_TFC9, DL_TFC39	UL_TFC9, UL_TFC33	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC24, UL_TFC27, UL_TFC30, UL_TFC33	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 312 bits
10	DL_TFC10, DL_TFC40	UL_TFC10, UL_TFC34	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC24, UL_TFC28, UL_TFC30, UL_TFC34	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 312 bits
11	DL_TFC11, DL_TFC41	UL_TFC11, UL_TFC35	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC24, UL_TFC29, UL_TFC30, UL_TFC35	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits

12	DL_TFC12, DL_TFC42	UL_TFC12, UL_TFC36	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC24, UL_TFC36	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: No data RB6: No data RB7: No data RB8: 632 bits
13	DL_TFC13, DL_TFC43	UL_TFC13, UL_TFC37	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC13, UL_TFC24, UL_TFC25, UL_TFC36, UL_TFC37	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 632 bits
14	DL_TFC14, DL_TFC44	UL_TFC14, UL_TFC38	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC14, UL_TFC24, UL_TFC26, UL_TFC36, UL_TFC38	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 632 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 632 bits
15	DL_TFC15, DL_TFC45	UL_TFC15, UL_TFC39	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC15, UL_TFC24, UL_TFC27, UL_TFC36, UL_TFC39	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 632 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 632 bits
16	DL_TFC16, DL_TFC46	UL_TFC16, UL_TFC40	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC16, UL_TFC24, UL_TFC28, UL_TFC36, UL_TFC40	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 632 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 632 bits

17	DL_TFC17, DL_TFC47	UL_TFC17, UL_TFC41	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC17, UL_TFC24, UL_TFC29, UL_TFC36, UL_TFC41	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits
18	DL_TFC18, DL_TFC48	UL_TFC18, UL_TFC42	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC24, UL_TFC42	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: No data RB6: No data RB7: No data RB8: 952 bits
19	DL_TFC19, DL_TFC49	UL_TFC19, UL_TFC43	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC19, UL_TFC24, UL_TFC25, UL_TFC42, UL_TFC43	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 952 bits
20	DL_TFC20, DL_TFC50	UL_TFC20, UL_TFC44	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC20, UL_TFC24, UL_TFC26, UL_TFC42, UL_TFC44	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 1272 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 952 bits
21	DL_TFC21, DL_TFC51	UL_TFC21, UL_TFC45	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC21, UL_TFC24, UL_TFC27, UL_TFC42, UL_TFC45	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 1272 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 952 bits

22	DL_TFC22, DL_TFC52	UL_TFC22, UL_TFC46	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC22, UL_TFC24, UL_TFC28, UL_TFC42, UL_TFC46	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 1272 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 952 bits
23	DL_TFC23, DL_TFC53	UL_TFC23, UL_TFC47	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC23, UL_TFC24, UL_TFC29, UL_TFC42, UL_TFC47	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 952 bits
24	DL_TFC24, DL_TFC54	UL_TFC18, UL_TFC42	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC24, UL_TFC42	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: No data RB6: No data RB7: No data RB8: 1272 bits
25	DL_TFC25, DL_TFC55	UL_TFC19, UL_TFC43	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC19, UL_TFC24, UL_TFC25, UL_TFC42, UL_TFC43	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 1272 bits
26	DL_TFC26, DL_TFC56	UL_TFC20, UL_TFC44	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC20, UL_TFC24, UL_TFC26, UL_TFC42, UL_TFC44	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 1272 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 1272 bits

27	DL_TFC27, DL_TFC57	UL_TFC21, UL_TFC45	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC21, UL_TFC24, UL_TFC27, UL_TFC42, UL_TFC45	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 1272 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 1272 bits
28	DL_TFC28, DL_TFC58	UL_TFC22, UL_TFC46	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC22, UL_TFC24, UL_TFC28, UL_TFC42, UL_TFC46	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 1272 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 1272 bits
29	DL_TFC29, DL_TFC59	UL_TFC23, UL_TFC47	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC23, UL_TFC24, UL_TFC29, UL_TFC42, UL_TFC47	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC24 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).</p>						

14.2.38i.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 15 the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2,3 and 4: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.

- for sub-test 6: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 7: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 8,9 and 10: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 11: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
- for sub-test 12: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 13: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 14,15 and 16: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 17: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
- for sub-test 18: RLC SDUs on RB8 having the first 952 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 19: RLC SDUs on RB5 having the same content as sent by the SS; RLC SDUs on RB8 having the first 952 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
- for sub-test 20,21 and 22: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; RLC SDUs on RB8 having the first 952 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB7.
- for sub-test 23: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and RLC SDUs on RB8 having the first 952 bits equal to the content of the test data sent by the SS in downlink.
- for sub-test 24: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 25: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 26,27 and 28: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 29: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.38j Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.38j.1 Conformance requirement

See clause 14.2.4.1.

14.2.38j.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.38j.

14.2.38j.3 Method of test

See clause 14.1.2 for test procedure.

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	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	3x336	N/A
	TF4, bits	1x75	1x103	N/A	4x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	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, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF2, TF0)
UL_TFC13	(TF1, TF0, TF0, TF2, TF0)
UL_TFC14	(TF2, TF1, TF0, TF2, TF0)
UL_TFC15	(TF3, TF2, TF0, TF2, TF0)
UL_TFC16	(TF4, TF3, TF0, TF2, TF0)
UL_TFC17	(TF5, TF4, TF1, TF2, TF0)
UL_TFC18	(TF0, TF0, TF0, TF4, TF0)
UL_TFC19	(TF1, TF0, TF0, TF4, TF0)
UL_TFC20	(TF2, TF1, TF0, TF4, TF0)
UL_TFC21	(TF3, TF2, TF0, TF4, TF0)
UL_TFC22	(TF4, TF3, TF0, TF4, TF0)
UL_TFC23	(TF5, TF4, TF1, TF4, TF0)
UL_TFC24	(TF0, TF0, TF0, TF0, TF1)
UL_TFC25	(TF1, TF0, TF0, TF0, TF1)
UL_TFC26	(TF2, TF1, TF0, TF0, TF1)
UL_TFC27	(TF3, TF2, TF0, TF0, TF1)
UL_TFC28	(TF4, TF3, TF0, TF0, TF1)
UL_TFC29	(TF5, TF4, TF1, TF0, TF1)
UL_TFC30	(TF0, TF0, TF0, TF1, TF1)
UL_TFC31	(TF1, TF0, TF0, TF1, TF1)
UL_TFC32	(TF2, TF1, TF0, TF1, TF1)
UL_TFC33	(TF3, TF2, TF0, TF1, TF1)
UL_TFC34	(TF4, TF3, TF0, TF1, TF1)
UL_TFC35	(TF5, TF4, TF1, TF1, TF1)
UL_TFC36	(TF0, TF0, TF0, TF2, TF1)
UL_TFC37	(TF1, TF0, TF0, TF2, TF1)
UL_TFC38	(TF2, TF1, TF0, TF2, TF1)
UL_TFC39	(TF3, TF2, TF0, TF2, TF1)
UL_TFC40	(TF4, TF3, TF0, TF2, TF1)
UL_TFC41	(TF5, TF4, TF1, TF2, TF1)
UL_TFC42	(TF0, TF0, TF0, TF4, TF1)
UL_TFC43	(TF1, TF0, TF0, TF4, TF1)
UL_TFC44	(TF2, TF1, TF0, TF4, TF1)
UL_TFC45	(TF3, TF2, TF0, TF4, TF1)
UL_TFC46	(TF4, TF3, TF0, TF4, TF1)
UL_TFC47	(TF5, TF4, TF1, TF4, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (128 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x53	1x60	1x336	1x148
	TF2, bits	1x42	1x63	N/A	2x336	N/A
	TF3, bits	1x55	1x84	N/A	4x336	N/A
	TF4, bits	1x75	1x103	N/A	8x336	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0,TF0,TF0,TF0,TF0)
DL_TFC1	(TF1,TF0,TF0,TF0,TF0)
DL_TFC2	(TF2,TF1,TF0,TF0,TF0)
DL_TFC3	(TF3,TF2,TF0,TF0,TF0)
DL_TFC4	(TF4,TF3,TF0,TF0,TF0)
DL_TFC5	(TF5,TF4,TF1,TF0,TF0)
DL_TFC6	(TF0,TF0,TF0,TF1,TF0)
DL_TFC7	(TF1,TF0,TF0,TF1,TF0)
DL_TFC8	(TF2,TF1,TF0,TF1,TF0)
DL_TFC9	(TF3,TF2,TF0,TF1,TF0)
DL_TFC10	(TF4,TF3,TF0,TF1,TF0)
DL_TFC11	(TF5,TF4,TF1,TF1,TF0)
DL_TFC12	(TF0,TF0,TF0,TF2,TF0)
DL_TFC13	(TF1,TF0,TF0,TF2,TF0)
DL_TFC14	(TF2,TF1,TF0,TF2,TF0)
DL_TFC15	(TF3,TF2,TF0,TF2,TF0)
DL_TFC16	(TF4,TF3,TF0,TF2,TF0)
DL_TFC17	(TF5,TF4,TF1,TF2,TF0)
DL_TFC18	(TF0,TF0,TF0,TF3,TF0)
DL_TFC19	(TF1,TF0,TF0,TF3,TF0)
DL_TFC20	(TF2,TF1,TF0,TF3,TF0)
DL_TFC21	(TF3,TF2,TF0,TF3,TF0)
DL_TFC22	(TF4,TF3,TF0,TF3,TF0)
DL_TFC23	(TF5,TF4,TF1,TF3,TF0)
DL_TFC24	(TF0,TF0,TF0,TF4,TF0)
DL_TFC25	(TF1,TF0,TF0,TF4,TF0)
DL_TFC26	(TF2,TF1,TF0,TF4,TF0)
DL_TFC27	(TF3,TF2,TF0,TF4,TF0)
DL_TFC28	(TF4,TF3,TF0,TF4,TF0)
DL_TFC29	(TF5,TF4,TF1,TF4,TF0)
DL_TFC30	(TF0,TF0,TF0,TF0,TF1)
DL_TFC31	(TF1,TF0,TF0,TF0,TF1)
DL_TFC32	(TF2,TF1,TF0,TF0,TF1)
DL_TFC33	(TF3,TF2,TF0,TF0,TF1)
DL_TFC34	(TF4,TF3,TF0,TF0,TF1)
DL_TFC35	(TF5,TF4,TF1,TF0,TF1)
DL_TFC36	(TF0,TF0,TF0,TF1,TF1)
DL_TFC37	(TF1,TF0,TF0,TF1,TF1)
DL_TFC38	(TF2,TF1,TF0,TF1,TF1)
DL_TFC39	(TF3,TF2,TF0,TF1,TF1)
DL_TFC40	(TF4,TF3,TF0,TF1,TF1)
DL_TFC41	(TF5,TF4,TF1,TF1,TF1)
DL_TFC42	(TF0,TF0,TF0,TF2,TF1)
DL_TFC43	(TF1,TF0,TF0,TF2,TF1)
DL_TFC44	(TF2,TF1,TF0,TF2,TF1)
DL_TFC45	(TF3,TF2,TF0,TF2,TF1)
DL_TFC46	(TF4,TF3,TF0,TF2,TF1)
DL_TFC47	(TF5,TF4,TF1,TF2,TF1)
DL_TFC48	(TF0,TF0,TF0,TF3,TF1)
DL_TFC49	(TF1,TF0,TF0,TF3,TF1)
DL_TFC50	(TF2,TF1,TF0,TF3,TF1)
DL_TFC51	(TF3,TF2,TF0,TF3,TF1)
DL_TFC52	(TF4,TF3,TF0,TF3,TF1)
DL_TFC53	(TF5,TF4,TF1,TF3,TF1)
DL_TFC54	(TF0,TF0,TF0,TF4,TF1)
DL_TFC55	(TF1,TF0,TF0,TF4,TF1)
DL_TFC56	(TF2,TF1,TF0,TF4,TF1)
DL_TFC57	(TF3,TF2,TF0,TF4,TF1)
DL_TFC58	(TF4,TF3,TF0,TF4,TF1)
DL_TFC59	(TF5,TF4,TF1,TF4,TF1)

Sub-tests:

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCs (note 1)	UL RLC SDU size (note 2)	Test data size (note 2)
1	DL_TFC1, DL_TFC31	UL_TFC1, UL_TFC25	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC25	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC32	UL_TFC2, UL_TFC26	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC26	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: No data
3	DL_TFC3, DL_TFC33	UL_TFC3, UL_TFC27	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC27	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: No data
4	DL_TFC4, DL_TFC34	UL_TFC4, UL_TFC28	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC28	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: No data
5	DL_TFC5, DL_TFC35	UL_TFC5, UL_TFC29	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC29	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: No data
6	DL_TFC6, DL_TFC36	UL_TFC6, UL_TFC30	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC24, UL_TFC30	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: No data RB6: No data RB7: No data RB8: 312 bits

7	DL_TFC7, DL_TFC37	UL_TFC7, UL_TFC31	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC24, UL_TFC25, UL_TFC30, UL_TFC31	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 312 bits
8	DL_TFC8, DL_TFC38	UL_TFC8, UL_TFC32	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC24, UL_TFC26, UL_TFC30, UL_TFC32	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 312 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 312 bits
9	DL_TFC9, DL_TFC39	UL_TFC9, UL_TFC33	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC24, UL_TFC27, UL_TFC30, UL_TFC33	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 312 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 312 bits
10	DL_TFC10, DL_TFC40	UL_TFC10, UL_TFC34	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC24, UL_TFC28, UL_TFC30, UL_TFC34	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 312 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 312 bits
11	DL_TFC11, DL_TFC41	UL_TFC11, UL_TFC35	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC24, UL_TFC29, UL_TFC30, UL_TFC35	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 312 bits

12	DL_TFC12, DL_TFC42	UL_TFC12, UL_TFC36	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC24, UL_TFC36	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: No data RB6: No data RB7: No data RB8: 632 bits
13	DL_TFC13, DL_TFC43	UL_TFC13, UL_TFC37	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC13, UL_TFC24, UL_TFC25, UL_TFC36, UL_TFC37	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 632 bits
14	DL_TFC14, DL_TFC44	UL_TFC14, UL_TFC38	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC14, UL_TFC24, UL_TFC26, UL_TFC36, UL_TFC38	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 632 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 632 bits
15	DL_TFC15, DL_TFC45	UL_TFC15, UL_TFC39	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC15, UL_TFC24, UL_TFC27, UL_TFC36, UL_TFC39	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 632 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 632 bits
16	DL_TFC16, DL_TFC46	UL_TFC16, UL_TFC40	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC16, UL_TFC24, UL_TFC28, UL_TFC36, UL_TFC40	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 632 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 632 bits

17	DL_TFC17, DL_TFC47	UL_TFC17, UL_TFC41	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC17, UL_TFC24, UL_TFC29, UL_TFC36, UL_TFC41	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 632 bits
18	DL_TFC18, DL_TFC48	UL_TFC18, UL_TFC42	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC24, UL_TFC42	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: No data RB6: No data RB7: No data RB8: 1272 bits
19	DL_TFC19, DL_TFC49	UL_TFC19, UL_TFC43	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC19, UL_TFC24, UL_TFC25, UL_TFC42, UL_TFC43	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 1272 bits
20	DL_TFC20, DL_TFC50	UL_TFC20, UL_TFC44	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC20, UL_TFC24, UL_TFC26, UL_TFC42, UL_TFC44	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 1272 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 1272 bits
21	DL_TFC21, DL_TFC51	UL_TFC21, UL_TFC45	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC21, UL_TFC24, UL_TFC27, UL_TFC42, UL_TFC45	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 1272 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 1272 bits

22	DL_TFC22, DL_TFC52	UL_TFC22, UL_TFC46	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC22, UL_TFC24, UL_TFC28, UL_TFC42, UL_TFC46	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 1272 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 1272 bits
23	DL_TFC23, DL_TFC53	UL_TFC23, UL_TFC47	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC23, UL_TFC24, UL_TFC29, UL_TFC42, UL_TFC47	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits
24	DL_TFC24, DL_TFC54	UL_TFC18, UL_TFC42	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC24, UL_TFC42	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: No data RB6: No data RB7: No data RB8: 2552 bits
25	DL_TFC25, DL_TFC55	UL_TFC19, UL_TFC43	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC19, UL_TFC24, UL_TFC25, UL_TFC42, UL_TFC43	RB5: 39 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 39 bits RB6: No data RB7: No data RB8: 2552 bits
26	DL_TFC26, DL_TFC56	UL_TFC20, UL_TFC44	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC20, UL_TFC24, UL_TFC26, UL_TFC42, UL_TFC44	RB5: 42 bits RB6: 53 bits RB7: 60 bits RB8: 1272 bits	RB5: 42 bits RB6: 53 bits RB7: No data RB8: 2552 bits

27	DL_TFC27, DL_TFC57	UL_TFC21, UL_TFC45	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC21, UL_TFC24, UL_TFC27, UL_TFC42, UL_TFC45	RB5: 55 bits RB6: 63 bits RB7: 60 bits RB8: 1272 bits	RB5: 55 bits RB6: 63 bits RB7: No data RB8: 2552 bits
28	DL_TFC28, DL_TFC58	UL_TFC22, UL_TFC46	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC22, UL_TFC24, UL_TFC28, UL_TFC42, UL_TFC46	RB5: 75 bits RB6: 84 bits RB7: 60 bits RB8: 1272 bits	RB5: 75 bits RB6: 84 bits RB7: No data RB8: 2552 bits
29	DL_TFC29, DL_TFC59	UL_TFC23, UL_TFC47	DL_TFC0, DL_TFC30, UL_TFC0, UL_TFC24	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC18, UL_TFC23, UL_TFC24, UL_TFC29, UL_TFC42, UL_TFC47	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 1272 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits RB8: 2552 bits
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC24 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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).</p>						

14.2.38j.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 15 the UE shall return
 - for sub-test 1: RLC SDUs on RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2,3 and 4: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.

- for sub-test 6: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 7: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 8,9 and 10: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 11: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
- for sub-test 12: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 13: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 14,15 and 16: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 17: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
- for sub-test 18: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 19: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 20,21 and 22: RLC SDUs on RB5, RB6 and RB8 having the same content as sent by the SS; and no data shall be received on RB7.
- for sub-test 23: RLC SDUs on RB5, RB6 , RB7 and RB8 having the same content as sent by the SS.
- for sub-test 24: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 25: RLC SDUs on RB5 having the same content as sent by the SS; RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
- for sub-test 26,27 and 28: RLC SDUs on RB5 and RB6 having the same content as sent by the SS; RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB7.
- for sub-test 29: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and RLC SDUs on RB8 having the content equal to the first 1272 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.

14.2.39 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.39.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or
background / UL:32 DL:64 kbps / PS RAB / (TC, 10 ms TTI)

14.2.39.1.1 Conformance requirement

See 14.2.4.1.

14.2.39.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.39 for the uplink turbo channel coding and 10 ms TTI case.

14.2.39.1.3 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 (32 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	N/A	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, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1, TF0, TF1)
UL_TFC9	(TF0, TF0, TF0, TF1, TF1)
UL_TFC10	(TF1, TF0, TF0, TF1, TF1)
UL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC16	UL_TFC1 UL_TFC7	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, UL_TFC8	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC18	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC20	UL_TFC5 UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC21	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC22	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 632
8	DL_TFC8, DL_TFC23	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
9	DL_TFC9, DL_TFC24	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 952
10	DL_TFC10, DL_TFC25	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 952
11	DL_TFC11, DL_TFC26	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 952
12	DL_TFC12, DL_TFC27	UL_TFC3, UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 1272
13	DL_TFC13, DL_TFC28	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 1272
14	DL_TFC14, DL_TFC29	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC6 are part of minimum set of TFCs

NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

RB8: 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 uplink TTI for RB8 is 10 ms while the downlink TTI is 20 ms then, to achieve continous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over two subsequent TTIs, i.e. UL RLC SDU SIZE has been set to two times the uplink TFS size minus 8 bits (size of 7 bit length indicator and expansion bit).

14.2.39.1.4 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 RB5 having the same content as sent by SS; and no data shall be received on RB6, RB7 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 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, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB8 having the first 312 bits equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB8 having the first 312 bits equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.39.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB / (TC, 20 ms TTI)

14.2.39.2.1 Conformance requirement

See 14.2.4.1.

14.2.39.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.39 for the uplink turbo channel coding and 20 ms TTI case.

14.2.39.2.3 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 (32 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

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, TF0, TF1)
UL_TFC10	(TF1, TF0, TF0, TF0, TF1)
UL_TFC11	(TF2, TF1, TF1, TF0, TF1)
UL_TFC12	(TF0, TF0, TF0, TF1, TF1)
UL_TFC13	(TF1, TF0, TF0, TF1, TF1)
UL_TFC14	(TF2, TF1, TF1, TF1, TF1)
UL_TFC15	(TF0, TF0, TF0, TF2, TF1)
UL_TFC16	(TF1, TF0, TF0, TF2, TF1)
UL_TFC17	(TF2, TF1, TF1, TF2, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1, DL_TFC16	UL_TFC1, UL_TFC10	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, UL_TFC11	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC18	UL_TFC3, UL_TFC12	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC13	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC9, UL_TFC10, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC20	UL_TFC5, UL_TFC14	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC9, UL_TFC11, UL_TFC12, UL_TFC14	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC21	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC22	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
8	DL_TFC8, DL_TFC23	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC9, DL_TFC24	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 952
10	DL_TFC10, DL_TFC25	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 952
11	DL_TFC11, DL_TFC26	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 952
12	DL_TFC12, DL_TFC27	UL_TFC6, UL_TFC15	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: No data RB6: No data RB7: No data RB8: 1272
13	DL_TFC13, DL_TFC28	UL_TFC7, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: 1272
14	DL_TFC14, DL_TFC29	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC9 are part of minimum set of TFCs						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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).						

14.2.39.2.4 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 TFCs 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.39.3 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB / (CC, 10 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.39 for the uplink convolutional channel coding and 10 ms TTI case.

See test case 14.2.39.1 for test procedure and test requirement.

14.2.39.4 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:32 DL:64 kbps / PS RAB / (CC, 20 ms TTI)

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.39 for the uplink convolutional channel coding and 20 ms TTI case.

See test case 14.2.39.2 for test procedure and test requirement.

14.2.40 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.40.1 Conformance requirement

See 14.2.4.1.

14.2.40.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.40.

14.2.40.3 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 (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)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 (note 1)	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	RB5: 39 RB6: No data RB7: No data RB8: 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	RB5: 81 RB6: 103 RB7: 60 RB8: 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	RB5: No data RB6: No data RB7: No data RB8: 312
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	RB5: 39 RB6: No data RB7: No data RB8: 312
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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
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	RB5: No data RB6: No data RB7: No data RB8: 632
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	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
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	RB5: No data RB6: No data RB7: No data RB8: 952
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	RB5: 39 RB6: No data RB7: No data RB8: 952
11	DL_TFC11, DL_TFC26	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC2, UL_TFC9, UL_TFC11, UL_TFC15, UL_TFC17, UL_TFC24, UL_TFC26	RB5: 81 RB6: 103 RB7: 60 RB8: 952	RB5: 81 RB6: 103 RB7: 60 RB8: 952
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	RB5: No data RB6: No data RB7: No data RB8: 1272
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	RB5: 39 RB6: No data RB7: No data RB8: 1272
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	RB5: 81 RB6: 103 RB7: 60 RB8: 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)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 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: 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). 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 the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.2.40.4 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 RB5 having the same content as sent by SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8.
 - for sub-test 3, 6, 9 and 12: RLC SDUs on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4, 7, 10 and 13: RLC SDUs on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5, 8, 11 and 14: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.41 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.41.1 Conformance requirement

See 14.2.4.1.

14.2.41.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.41.

14.2.41.3 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 (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)	RB8 (128 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 (note 1)	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	RB5: 39 RB6: No data RB7: No data RB8: 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	RB5: 81 RB6: 103 RB7: 60 RB8: 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	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC15, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 312
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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
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	RB5: No data RB6: No data RB7: No data RB8: 632
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	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
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	RB5: No data RB6: No data RB7: No data RB8: 1272
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	RB5: 39 RB6: No data RB7: No data RB8: 1272
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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
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	RB5: No data RB6: No data RB7: No data RB8: 2552
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	RB5: 39 RB6: No data RB7: No data RB8: 2552
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	RB5: 81 RB6: 103 RB7: 60 RB8: 2552

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCs.						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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). 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 the payload size of the UL TF under test minus 8 bits (size of 7 bit length indicator and expansion bit).						

14.2.41.4 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 TFCs 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 RB5 having the same content as sent by SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8.
 - for sub-test 3: RLC SDUs on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: RLC SDUs on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 6: RLC SDUs on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: RLC SDUs on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: RLC SDUs on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: RLC SDUs on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; RLC SDUs on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.42 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.42.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or
background / UL:64 DL:256 kbps / PS RAB / 10 ms TTI

14.2.42.1.1 Conformance requirement

See 14.2.4.1.

14.2.42.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.42 for the downlink 10 ms TTI case.

14.2.42.1.3 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 (64 kbps)	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)	RB8 (256 kbps)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC16	UL_TFC1, DL_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	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, DL_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	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC18	UL_TFC3, DL_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	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC19	UL_TFC4, DL_TFC19	DL_TFC0, DL_TFC15, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC20	UL_TFC5, DL_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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC21	UL_TFC6, DL_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	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC22	UL_TFC7, DL_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	RB5: 39 RB6: No data RB7: No data RB8: 632

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)
8	DL_TFC8, DL_TFC23	UL_TFC8, DL_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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC9, DL_TFC24	UL_TFC9, DL_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	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC10, DL_TFC25	UL_TFC10, DL_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	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC11, DL_TFC26	UL_TFC11, DL_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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC12, DL_TFC27	UL_TFC12, DL_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	RB5: No data RB6: No data RB7: No data RB8: 2552
13	DL_TFC13, DL_TFC28	UL_TFC13, DL_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	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC14, DL_TFC29	UL_TFC14, DL_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	RB5: 81 RB6: 103 RB7: 60 RB8: 2552

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
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. RB8: 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 uplink TTI for RB8 is 20 ms while the downlink TTI is 10 ms then, to achieve continuous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over each TTIs, i.e. UL RLC SDU SIZE has been set to the uplink TFS size under test minus 8 (the size of a 7 bit length indicator and expansion bit).						

14.2.42.1.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 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, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB8 having the first 312 bits equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB8 having the first 312 bits equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.42.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:256 kbps / PS RAB / 20 ms TTI

14.2.42.2.1 Conformance requirement

See 14.2.4.1.

14.2.42.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.42 for the downlink 20 ms TTI case.

14.2.42.2.3 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 (64 kbps)	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)	RB8 (256 kbps, 20 ms)	DCCH
TFS	TF0, bits	1x0	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
	TF6, bits	N/A	N/A	N/A	16x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF5, TF0)
DL_TFC16	(TF1, TF0, TF0, TF5, TF0)
DL_TFC17	(TF2, TF1, TF1, TF5, TF0)
DL_TFC18	(TF0, TF0, TF0, TF6, TF0)
DL_TFC19	(TF1, TF0, TF0, TF6, TF0)
DL_TFC20	(TF2, TF1, TF1, TF6, TF0)
DL_TFC21	(TF0, TF0, TF0, TF0, TF1)
DL_TFC22	(TF1, TF0, TF0, TF0, TF1)
DL_TFC23	(TF2, TF1, TF1, TF0, TF1)
DL_TFC24	(TF0, TF0, TF0, TF1, TF1)
DL_TFC25	(TF1, TF0, TF0, TF1, TF1)
DL_TFC26	(TF2, TF1, TF1, TF1, TF1)
DL_TFC27	(TF0, TF0, TF0, TF2, TF1)
DL_TFC28	(TF1, TF0, TF0, TF2, TF1)
DL_TFC29	(TF2, TF1, TF1, TF2, TF1)
DL_TFC30	(TF0, TF0, TF0, TF3, TF1)
DL_TFC31	(TF1, TF0, TF0, TF3, TF1)
DL_TFC32	(TF2, TF1, TF1, TF3, TF1)
DL_TFC33	(TF0, TF0, TF0, TF4, TF1)
DL_TFC34	(TF1, TF0, TF0, TF4, TF1)
DL_TFC35	(TF2, TF1, TF1, TF4, TF1)
DL_TFC36	(TF0, TF0, TF0, TF5, TF1)
DL_TFC37	(TF1, TF0, TF0, TF5, TF1)
DL_TFC38	(TF2, TF1, TF1, TF5, TF1)
DL_TFC39	(TF0, TF0, TF0, TF6, TF1)
DL_TFC40	(TF1, TF0, TF0, TF6, TF1)
DL_TFC41	(TF2, TF1, TF1, 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, DL_TFC22	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC21, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC23	UL_TFC2, UL_TFC17	DL_TFC0, DL_TFC21, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC24	UL_TFC3, UL_TFC18	DL_TFC0, DL_TFC21, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC25	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC21, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC26	UL_TFC5, UL_TFC20	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC27	UL_TFC6, UL_TFC21	DL_TFC0, DL_TFC21, 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	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC28	UL_TFC7, UL_TFC22	DL_TFC0, DL_TFC21, 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	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
8	DL_TFC8, DL_TFC29	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC9, DL_TFC30	UL_TFC9, UL_TFC24	DL_TFC0, DL_TFC21, 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	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC10, DL_TFC31	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC21, 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	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC11, DL_TFC32	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC12, DL_TFC33	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC21, 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	RB5: No data RB6: No data RB7: No data RB8: 2552
13	DL_TFC13, DL_TFC34	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC21, 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	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC14, DL_TFC35	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 2552

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)
15	DL_TFC15, DL_TFC36	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC21, 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	RB5: No data RB6: No data RB7: No data RB8: 3832
16	DL_TFC16, DL_TFC37	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC21, 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	RB5: 39 RB6: No data RB7: No data RB8: 3832
17	DL_TFC17, DL_TFC38	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 3832
18	DL_TFC18, DL_TFC39	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC21, 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	RB5: No data RB6: No data RB7: No data RB8: 5112
19	DL_TFC19, DL_TFC40	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC21, 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	RB5: 39 RB6: No data RB7: No data RB8: 5112
20	DL_TFC20, DL_TFC41	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC21, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
<p>NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCIs</p> <p>NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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).</p>						

14.2.42.2.4

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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB5 and RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB5 and RB8 having the content equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 952 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 14: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 15: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 16: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 17: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 18: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 19: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.

- for sub-test 20: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.43 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.43.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.2.43.1.1 Conformance requirement

See 14.2.4.1.

14.2.43.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.43 for the downlink 10 ms TTI case.

14.2.43.1.3 Method of test

See 14.1.2 for test procedure.

For the PS DL:384/UL:64 kbps radio bearer the downlink TTI is 10ms while the uplink TTI is 20ms. As the SS will send one DL SDU every 10 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.

The following RLC parameter value is used in the RADIO BEARER SETUP message used to setup the PS DL:384/UL:64 kbps radio bearer:

Uplink RLC Transmission window size	512
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NOTE The transmission window size value have been chosen to avoid that UE transmission buffer becomes full during the 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)	RB8 (384 kbps, 10 ms)	DCCH
TFS	TF0, bits	1x0	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

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF5, TF0)
DL_TFC16	(TF1, TF0, TF0, TF5, TF0)
DL_TFC17	(TF2, TF1, TF1, TF5, TF0)
DL_TFC18	(TF0, TF0, TF0, TF0, TF1)
DL_TFC19	(TF1, TF0, TF0, TF0, TF1)
DL_TFC20	(TF2, TF1, TF1, TF0, TF1)
DL_TFC21	(TF0, TF0, TF0, TF1, TF1)
DL_TFC22	(TF1, TF0, TF0, TF1, TF1)
DL_TFC23	(TF2, TF1, TF1, TF1, TF1)
DL_TFC24	(TF0, TF0, TF0, TF2, TF1)
DL_TFC25	(TF1, TF0, TF0, TF2, TF1)
DL_TFC26	(TF2, TF1, TF1, TF2, TF1)
DL_TFC27	(TF0, TF0, TF0, TF3, TF1)
DL_TFC28	(TF1, TF0, TF0, TF3, TF1)
DL_TFC29	(TF2, TF1, TF1, TF3, TF1)
DL_TFC30	(TF0, TF0, TF0, TF4, TF1)
DL_TFC31	(TF1, TF0, TF0, TF4, TF1)
DL_TFC32	(TF2, TF1, TF1, TF4, TF1)
DL_TFC33	(TF0, TF0, TF0, TF5, TF1)
DL_TFC34	(TF1, TF0, TF0, TF5, TF1)
DL_TFC35	(TF2, TF1, TF1, TF5, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 4)	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1, DL_TFC19	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC20	UL_TFC2, UL_TFC17	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC21	UL_TFC3, UL_TFC18	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312 (note 2)	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC22	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC18, UL_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 (note 2)	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC23	UL_TFC5, UL_TFC20	DL_TFC0, DL_TFC18, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC17, UL_TFC18, UL_TFC15, UL_TFC20	RB5: 81 RB6: 103 RB7: 60 RB8: 312 (note 2)	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC24	UL_TFC6, UL_TFC21	DL_TFC0, DL_TFC18, 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: 312 (note 3)	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC25	UL_TFC7, UL_TFC22	DL_TFC0, DL_TFC18, 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: 312 (note 3)	RB5: 39 RB6: No data RB7: No data RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 4)	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
8	DL_TFC8, DL_TFC26	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC18, 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: 312 (note 3)	RB5: 81 RB6: 103 RB7: 60 RB8: 632
9	DL_TFC9, DL_TFC27	UL_TFC9, UL_TFC24	DL_TFC0, DL_TFC18, 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: 1272 (note 2)	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC10, DL_TFC28	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC18, 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: 1272 (note 2)	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC11, DL_TFC29	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC18, 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: 1272 (note 2)	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC12, DL_TFC30	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC18, 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: 632 (note 3)	RB5: No data RB6: No data RB7: No data RB8: 2552
13	DL_TFC13, DL_TFC31	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC18, 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: 632 (note 3)	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC14, DL_TFC32	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC18, 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: 632 (note 3)	RB5: 81 RB6: 103 RB7: 60 RB8: 2552

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCIs (note 4)	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
15	DL_TFC15, DL_TFC33	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC18, 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: 632 (note 3)	RB5: No data RB6: No data RB7: No data RB8: 3832
16	DL_TFC16, DL_TFC34	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC18, , 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: 632 (note 3)	RB5: 39 RB6: No data RB7: No data RB8: 3832
17	DL_TFC17, DL_TFC35	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC18, 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: 632 (note 3)	RB5: 81 RB6: 103 RB7: 60 RB8: 3832
<p>NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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).</p> <p>NOTE 2: RB8 (TF1/TF3): For sub-tests where uplink transport format TF1 (1x336) or TF3 (3x336) are used then no adaptation to the difference in downlink TTI (10 ms) and uplink TTI (20ms) is possible as this would require the UE to concatenate 2 SDUs into one PDU for TF1; or into three PDUs for TF3. 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).</p> <p>NOTE 3: RB8 (TF2/TF4): For sub-tests where uplink transport formats TF2 (2x336) or TF4 (4x336) is used then to adopt to the difference in downlink TTI (10 ms) and uplink TTI (20ms) 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).</p> <p>NOTE 4: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCIs.</p>						

14.2.43.1.4 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 RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.
 - for sub-test 3: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.

- for sub-test 4: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 5: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by the SS.
- for sub-test 6: RLC SDUs on RB8 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, RB6 and RB7.
- for sub-test 7: RLC SDUs on RB5 having the same content as sent by the SS; RLC SDUs on RB8 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 RB6 and RB7.
- for sub-test 8: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and RLC SDUs on RB8 having the first 312 bits equal to the content of the test data sent by the SS in downlink.
- for sub-test 9: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 10: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
- for sub-test 11: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by the SS.
- for sub-test 12: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 13: RLC SDUs on RB5 having the same content as sent by the SS; RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
- for sub-test 14: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink.
- for sub-test 15: RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 16: RLC SDUs on RB5 having the same content as sent by the SS; RLC SDUs on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB6 and RB7.
- for sub-test 17: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the the SS; and RLC SDUs on RB8 having the content equal to the first 632 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.

14.2.43.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.2.43.2.1 Conformance requirement

See 14.2.4.1.

14.2.43.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.43 for the downlink 20 ms TTI case.

14.2.43.2.3 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 (64 kbps)	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)	RB8 (384 kbps, 20 ms)	DCCH
TFS	TF0, bits	1x0	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
	TF6, bits	N/A	N/A	N/A	16x336	N/A
	TF7, bits	N/A	N/A	N/A	20x336	N/A
	TF8, bits	N/A	N/A	N/A	24x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)

TFCI	(RB5, RB6, RB7, RB8, DCCH)
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, TF5, TF0)
DL_TFC16	(TF1, TF0, TF0, TF5, TF0)
DL_TFC17	(TF2, TF1, TF1, TF5, TF0)
DL_TFC18	(TF0, TF0, TF0, TF6, TF0)
DL_TFC19	(TF1, TF0, TF0, TF6, TF0)
DL_TFC20	(TF2, TF1, TF1, TF6, TF0)
DL_TFC21	(TF0, TF0, TF0, TF7, TF0)
DL_TFC22	(TF1, TF0, TF0, TF7, TF0)
DL_TFC23	(TF2, TF1, TF1, TF7, TF0)
DL_TFC24	(TF0, TF0, TF0, TF8, TF0)
DL_TFC25	(TF1, TF0, TF0, TF8, TF0)
DL_TFC26	(TF2, TF1, TF1, TF8, TF0)
DL_TFC27	(TF0, TF0, TF0, TF0, TF1)
DL_TFC28	(TF1, TF0, TF0, TF0, TF1)
DL_TFC29	(TF2, TF1, TF1, TF0, TF1)
DL_TFC30	(TF0, TF0, TF0, TF1, TF1)
DL_TFC31	(TF1, TF0, TF0, TF1, TF1)
DL_TFC32	(TF2, TF1, TF1, TF1, TF1)
DL_TFC33	(TF0, TF0, TF0, TF2, TF1)
DL_TFC34	(TF1, TF0, TF0, TF2, TF1)
DL_TFC35	(TF2, TF1, TF1, TF2, TF1)
DL_TFC36	(TF0, TF0, TF0, TF3, TF1)
DL_TFC37	(TF1, TF0, TF0, TF3, TF1)
DL_TFC38	(TF2, TF1, TF1, TF3, TF1)
DL_TFC39	(TF0, TF0, TF0, TF4, TF1)
DL_TFC40	(TF1, TF0, TF0, TF4, TF1)
DL_TFC41	(TF2, TF1, TF1, TF4, TF1)
DL_TFC42	(TF0, TF0, TF0, TF5, TF1)
DL_TFC43	(TF1, TF0, TF0, TF5, TF1)
DL_TFC44	(TF2, TF1, TF1, TF5, TF1)
DL_TFC45	(TF0, TF0, TF0, TF6, TF1)
DL_TFC46	(TF1, TF0, TF0, TF6, TF1)
DL_TFC47	(TF2, TF1, TF1, TF6, TF1)
DL_TFC48	(TF0, TF0, TF0, TF7, TF1)
DL_TFC49	(TF1, TF0, TF0, TF7, TF1)
DL_TFC50	(TF2, TF1, TF1, TF7, TF1)
DL_TFC51	(TF0, TF0, TF0, TF8, TF1)
DL_TFC52	(TF1, TF0, TF0, TF8, TF1)
DL_TFC53	(TF2, TF1, TF1, 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)

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC28	UL_TFC1,U L_TFC16	DL_TFC0, DL_TFC27, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC29	UL_TFC2,U L_TFC17	DL_TFC0, DL_TFC27, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 312	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC30	UL_TFC3,U L_TFC19	DL_TFC0, DL_TFC27, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 312
4	DL_TFC4, DL_TFC31	UL_TFC4,U L_TFC19	DL_TFC0, DL_TFC27, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 312
5	DL_TFC5, DL_TFC32	UL_TFC5,U L_TFC20	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6, DL_TFC33	UL_TFC6,U L_TFC21	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 632
7	DL_TFC7, DL_TFC34	UL_TFC7,U L_TFC22	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 632
8	DL_TFC8, DL_TFC35	UL_TFC8,U L_TFC23	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 632

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
9	DL_TFC9, DL_TFC36	UL_TFC9,U L_TFC24	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC10, DL_TFC37	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 1272
11	DL_TFC11, DL_TFC38	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC12, DL_TFC39	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 2552
13	DL_TFC13, DL_TFC40	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC14, DL_TFC41	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
15	DL_TFC15, DL_TFC42	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 3832

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)
16	DL_TFC16, DL_TFC43	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC27, , 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	RB5: 39 RB6: No data RB7: No data RB8: 3832
17	DL_TFC17, DL_TFC44	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 3832
18	DL_TFC18, DL_TFC45	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 5112
19	DL_TFC19, DL_TFC46	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 5112
20	DL_TFC20, DL_TFC47	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
21	DL_TFC21, DL_TFC48	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 6392
22	DL_TFC22, DL_TFC49	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 6392

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)
23	DL_TFC23, DL_TFC50	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 6392
24	DL_TFC24, DL_TFC51	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC27, 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	RB5: No data RB6: No data RB7: No data RB8: 7672
25	DL_TFC25, DL_TFC52	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC27, 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	RB5: 39 RB6: No data RB7: No data RB8: 7672
26	DL_TFC26, DL_TFC53	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC27, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 7672
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. RB8: 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).						

14.2.43.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15 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 and RB8.
 - 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.

- for sub-test 24: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 25: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 26: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.44 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.44.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB / 10 ms TTI

14.2.44.1.1 Conformance requirement

See 14.2.4.1.

14.2.44.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.44 for the downlink 10 ms TTI case.

14.2.44.1.3 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 (128 kbps)	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

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)	RB8 (2048 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x656	0x148
	TF1, bits	1x39	1x103	1x60	1x656	1x148
	TF2, bits	1x81	N/A	N/A	2x656	N/A
	TF3, bits	N/A	N/A	N/A	4x656	N/A
	TF4, bits	N/A	N/A	N/A	8x656	N/A
	TF5, bits	N/A	N/A	N/A	12x656	N/A
	TF6, bits	N/A	N/A	N/A	16x656	N/A
	TF7, bits	N/A	N/A	N/A	20x656	N/A
	TF8, bits	N/A	N/A	N/A	24x656	N/A
	TF9, bits	N/A	N/A	N/A	28x656	N/A
TF10, bits	N/A	N/A	N/A	32x656	N/A	

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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)

TFCI	(RB5, RB6, RB7, RB8, DCCH)
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, TF5, TF0)
DL_TFC16	(TF1, TF0, TF0, TF5, TF0)
DL_TFC17	(TF2, TF1, TF1, TF5, TF0)
DL_TFC18	(TF0, TF0, TF0, TF6, TF0)
DL_TFC19	(TF1, TF0, TF0, TF6, TF0)
DL_TFC20	(TF2, TF1, TF1, TF6, TF0)
DL_TFC21	(TF0, TF0, TF0, TF7, TF0)
DL_TFC22	(TF1, TF0, TF0, TF7, TF0)
DL_TFC23	(TF2, TF1, TF1, TF7, TF0)
DL_TFC24	(TF0, TF0, TF0, TF8, TF0)
DL_TFC25	(TF1, TF0, TF0, TF8, TF0)
DL_TFC26	(TF2, TF1, TF1, TF8, TF0)
DL_TFC27	(TF0, TF0, TF0, TF9, TF0)
DL_TFC28	(TF1, TF0, TF0, TF9, TF0)
DL_TFC29	(TF2, TF1, TF1, TF9, TF0)
DL_TFC30	(TF0, TF0, TF0, TF10, TF0)
DL_TFC31	(TF1, TF0, TF0, TF10, TF0)
DL_TFC32	(TF2, TF1, TF1, TF10, TF0)
DL_TFC33	(TF0, TF0, TF0, TF0, TF1)
DL_TFC34	(TF1, TF0, TF0, TF0, TF1)
DL_TFC35	(TF2, TF1, TF1, TF0, TF1)
DL_TFC36	(TF0, TF0, TF0, TF1, TF1)
DL_TFC37	(TF1, TF0, TF0, TF1, TF1)
DL_TFC38	(TF2, TF1, TF1, TF1, TF1)
DL_TFC39	(TF0, TF0, TF0, TF2, TF1)
DL_TFC40	(TF1, TF0, TF0, TF2, TF1)
DL_TFC41	(TF2, TF1, TF1, TF2, TF1)
DL_TFC42	(TF0, TF0, TF0, TF3, TF1)
DL_TFC43	(TF1, TF0, TF0, TF3, TF1)
DL_TFC44	(TF2, TF1, TF1, TF3, TF1)
DL_TFC45	(TF0, TF0, TF0, TF4, TF1)
DL_TFC46	(TF1, TF0, TF0, TF4, TF1)
DL_TFC47	(TF2, TF1, TF1, TF4, TF1)
DL_TFC48	(TF0, TF0, TF0, TF5, TF1)
DL_TFC49	(TF1, TF0, TF0, TF5, TF1)
DL_TFC50	(TF2, TF1, TF1, TF5, TF1)
DL_TFC51	(TF0, TF0, TF0, TF6, TF1)
DL_TFC52	(TF1, TF0, TF0, TF6, TF1)
DL_TFC53	(TF2, TF1, TF1, TF6, TF1)
DL_TFC54	(TF0, TF0, TF0, TF7, TF1)
DL_TFC55	(TF1, TF0, TF0, TF7, TF1)
DL_TFC56	(TF2, TF1, TF1, TF7, TF1)
DL_TFC57	(TF0, TF0, TF0, TF8, TF1)
DL_TFC58	(TF1, TF0, TF0, TF8, TF1)
DL_TFC59	(TF2, TF1, TF1, TF8, TF1)
DL_TFC60	(TF0, TF0, TF0, TF9, TF1)
DL_TFC61	(TF1, TF0, TF0, TF9, TF1)
DL_TFC62	(TF2, TF1, TF1, TF9, TF1)
DL_TFC63	(TF0, TF0, TF0, TF10, TF1)
DL_TFC64	(TF1, TF0, TF0, TF10, TF1)
DL_TFC65	(TF2, TF1, TF1, 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)

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC34	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC33, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3 , UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC35	UL_TFC2, UL_TFC17	DL_TFC0, DL_TFC33, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC3 , UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC36	UL_TFC3, UL_TFC18	DL_TFC0, DL_TFC33, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 632
4	DL_TFC4, DL_TFC37	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC33, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 632
5	DL_TFC5, DL_TFC38	UL_TFC5, UL_TFC20	DL_TFC0, DL_TFC33, 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: 632	RB5: 81 RB6: 103 RB7: 60 RB8: 632
6	DL_TFC6, DL_TFC39	UL_TFC6, UL_TFC21	DL_TFC0, DL_TFC33, 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	RB5: No data RB6: No data RB7: No data RB8: 1272
7	DL_TFC7, DL_TFC40	UL_TFC7, UL_TFC22	DL_TFC0, DL_TFC33, 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	RB5: 39 RB6: No data RB7: No data RB8: 1272
8	DL_TFC8, DL_TFC41	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC33, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
9	DL_TFC9, DL_TFC42	UL_TFC9, UL_TFC24	DL_TFC0, DL_TFC33, 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: 1272	RB5: No data RB6: No data RB7: No data RB8: 2552
10	DL_TFC10, DL_TFC43	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC33, 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: 1272	RB5: 39 RB6: No data RB7: No data RB8: 2552
11	DL_TFC11, DL_TFC44	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC33, 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: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
12	DL_TFC12, DL_TFC45	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 5112
13	DL_TFC13, DL_TFC46	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 5112
14	DL_TFC14, DL_TFC47	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 5112
15	DL_TFC15, DL_TFC48	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 7672

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
16	DL_TFC16, DL_TFC49	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 7672
17	DL_TFC17, DL_TFC50	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 7672
18	DL_TFC18, DL_TFC51	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 10232
19	DL_TFC19, DL_TFC52	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 10232
20	DL_TFC20, DL_TFC53	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 10232
21	DL_TFC21, DL_TFC54	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 12792
22	DL_TFC22, DL_TFC55	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 12792

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)
23	DL_TFC23, DL_TFC56	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 12792
24	DL_TFC24, DL_TFC57	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 15352
25	DL_TFC25, DL_TFC58	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 15352
26	DL_TFC26, DL_TFC59	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 15352
27	DL_TFC27, DL_TFC60	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 17912
28	DL_TFC28, DL_TFC61	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 17912
29	DL_TFC29, DL_TFC62	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 17912

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)
30	DL_TFC30, DL_TFC63	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC33, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 20472
31	DL_TFC31, DL_TFC64	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC33, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 20472
32	DL_TFC32, DL_TFC65	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC33, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 20472
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB8: 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 uplink TTI for RB8 is 20 ms while the downlink TTI is 10 ms then, to achieve continous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over each TTI, ie the uplink TFS size minus 8 bits (size of 7 bit length indicator and expansion bit).</p>						

14.2.44.1.4 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 15 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

- for sub-test 26: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
- for sub-test 27: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 28: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 29: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
- for sub-test 30: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 31: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 32: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.44.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:128 DL:2048 kbps / PS RAB / 20 ms TTI

14.2.44.2.1 Conformance requirement

See 14.2.4.1.

14.2.44.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.44 for the downlink 20 ms TTI case.

14.2.44.2.3 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 (128 kbps)	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

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)	RB8 (2048 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x656	0x148
	TF1, bits	1x39	1x103	1x60	1x656	1x148
	TF2, bits	1x81	N/A	N/A	2x656	N/A
	TF3, bits	N/A	N/A	N/A	4x656	N/A
	TF4, bits	N/A	N/A	N/A	8x656	N/A
	TF5, bits	N/A	N/A	N/A	12x656	N/A
	TF6, bits	N/A	N/A	N/A	16x656	N/A
	TF7, bits	N/A	N/A	N/A	20x656	N/A
	TF8, bits	N/A	N/A	N/A	24x656	N/A
	TF9, bits	N/A	N/A	N/A	28x656	N/A
	TF10, bits	N/A	N/A	N/A	32x656	N/A
	TF11, bits	N/A	N/A	N/A	36x656	N/A
	TF12, bits	N/A	N/A	N/A	40x656	N/A
	TF13, bits	N/A	N/A	N/A	44x656	N/A
	TF14, bits	N/A	N/A	N/A	48x656	N/A
	TF15, bits	N/A	N/A	N/A	52x656	N/A
	TF16, bits	N/A	N/A	N/A	56x656	N/A
	TF17, bits	N/A	N/A	N/A	60x656	N/A
TF18, bits	N/A	N/A	N/A	64x656	N/A	

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF5, TF0)
DL_TFC16	(TF1, TF0, TF0, TF5, TF0)
DL_TFC17	(TF2, TF1, TF1, TF5, TF0)
DL_TFC18	(TF0, TF0, TF0, TF6, TF0)
DL_TFC19	(TF1, TF0, TF0, TF6, TF0)
DL_TFC20	(TF2, TF1, TF1, TF6, TF0)
DL_TFC21	(TF0, TF0, TF0, TF7, TF0)
DL_TFC22	(TF1, TF0, TF0, TF7, TF0)
DL_TFC23	(TF2, TF1, TF1, TF7, TF0)
DL_TFC24	(TF0, TF0, TF0, TF8, TF0)
DL_TFC25	(TF1, TF0, TF0, TF8, TF0)
DL_TFC26	(TF2, TF1, TF1, TF8, TF0)
DL_TFC27	(TF0, TF0, TF0, TF9, TF0)
DL_TFC28	(TF1, TF0, TF0, TF9, TF0)
DL_TFC29	(TF2, TF1, TF1, TF9, TF0)
DL_TFC30	(TF0, TF0, TF0, TF10, TF0)
DL_TFC31	(TF1, TF0, TF0, TF10, TF0)
DL_TFC32	(TF2, TF1, TF1, TF10, TF0)
DL_TFC33	(TF0, TF0, TF0, TF11, TF0)
DL_TFC34	(TF1, TF0, TF0, TF11, TF0)
DL_TFC35	(TF2, TF1, TF1, TF11, TF0)
DL_TFC36	(TF0, TF0, TF0, TF12, TF0)
DL_TFC37	(TF1, TF0, TF0, TF12, TF0)
DL_TFC38	(TF2, TF1, TF1, TF12, TF0)
DL_TFC39	(TF0, TF0, TF0, TF13, TF0)
DL_TFC40	(TF1, TF0, TF0, TF13, TF0)
DL_TFC41	(TF2, TF1, TF1, TF13, TF0)
DL_TFC42	(TF0, TF0, TF0, TF14, TF0)
DL_TFC43	(TF1, TF0, TF0, TF14, TF0)
DL_TFC44	(TF2, TF1, TF1, TF14, TF0)
DL_TFC45	(TF0, TF0, TF0, TF15, TF0)
DL_TFC46	(TF1, TF0, TF0, TF15, TF0)
DL_TFC47	(TF2, TF1, TF1, TF15, TF0)
DL_TFC48	(TF0, TF0, TF0, TF16, TF0)
DL_TFC49	(TF1, TF0, TF0, TF16, TF0)
DL_TFC50	(TF2, TF1, TF1, TF16, TF0)
DL_TFC51	(TF0, TF0, TF0, TF17, TF0)
DL_TFC52	(TF1, TF0, TF0, TF17, TF0)
DL_TFC53	(TF2, TF1, TF1, TF17, TF0)
DL_TFC54	(TF0, TF0, TF0, TF18, TF0)
DL_TFC55	(TF1, TF0, TF0, TF18, TF0)
DL_TFC56	(TF2, TF1, TF1, TF18, TF0)
DL_TFC57	(TF0, TF0, TF0, TF0, TF1)
DL_TFC58	(TF1, TF0, TF0, TF0, TF1)
DL_TFC59	(TF2, TF1, TF1, TF0, TF1)
DL_TFC60	(TF0, TF0, TF0, TF1, TF1)

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC61	(TF1, TF0, TF0, TF1, TF1)
DL_TFC61	(TF2, TF1, TF1, TF1, TF1)
DL_TFC63	(TF0, TF0, TF0, TF2, TF1)
DL_TFC64	(TF1, TF0, TF0, TF2, TF1)
DL_TFC65	(TF2, TF1, TF1, TF2, TF1)
DL_TFC66	(TF0, TF0, TF0, TF3, TF1)
DL_TFC67	(TF1, TF0, TF0, TF3, TF1)
DL_TFC68	(TF2, TF1, TF1, TF3, TF1)
DL_TFC69	(TF0, TF0, TF0, TF4, TF1)
DL_TFC70	(TF1, TF0, TF0, TF4, TF1)
DL_TFC71	(TF2, TF1, TF1, TF4, TF1)
DL_TFC72	(TF0, TF0, TF0, TF5, TF1)
DL_TFC73	(TF1, TF0, TF0, TF5, TF1)
DL_TFC74	(TF2, TF1, TF1, TF5, TF1)
DL_TFC75	(TF0, TF0, TF0, TF6, TF1)
DL_TFC76	(TF1, TF0, TF0, TF6, TF1)
DL_TFC77	(TF2, TF1, TF1, TF6, TF1)
DL_TFC78	(TF0, TF0, TF0, TF7, TF1)
DL_TFC79	(TF1, TF0, TF0, TF7, TF1)
DL_TFC80	(TF2, TF1, TF1, TF7, TF1)
DL_TFC81	(TF0, TF0, TF0, TF8, TF1)
DL_TFC82	(TF1, TF0, TF0, TF8, TF1)
DL_TFC83	(TF2, TF1, TF1, TF8, TF1)
DL_TFC84	(TF0, TF0, TF0, TF9, TF1)
DL_TFC85	(TF1, TF0, TF0, TF9, TF1)
DL_TFC86	(TF2, TF1, TF1, TF9, TF1)
DL_TFC87	(TF0, TF0, TF0, TF10, TF1)
DL_TFC88	(TF1, TF0, TF0, TF10, TF1)
DL_TFC89	(TF2, TF1, TF1, TF10, TF1)
DL_TFC90	(TF0, TF0, TF0, TF11, TF1)
DL_TFC91	(TF1, TF0, TF0, TF11, TF1)
DL_TFC92	(TF2, TF1, TF1, TF11, TF1)
DL_TFC93	(TF0, TF0, TF0, TF12, TF1)
DL_TFC94	(TF1, TF0, TF0, TF12, TF1)
DL_TFC95	(TF2, TF1, TF1, TF12, TF1)
DL_TFC96	(TF0, TF0, TF0, TF13, TF1)
DL_TFC97	(TF1, TF0, TF0, TF13, TF1)
DL_TFC98	(TF2, TF1, TF1, TF13, TF1)
DL_TFC99	(TF0, TF0, TF0, TF14, TF1)
DL_TFC100	(TF1, TF0, TF0, TF14, TF1)
DL_TFC101	(TF2, TF1, TF1, TF14, TF1)
DL_TFC102	(TF0, TF0, TF0, TF15, TF1)
DL_TFC103	(TF1, TF0, TF0, TF15, TF1)
DL_TFC104	(TF2, TF1, TF1, TF15, TF1)
DL_TFC105	(TF0, TF0, TF0, TF16, TF1)
DL_TFC106	(TF1, TF0, TF0, TF16, TF1)
DL_TFC107	(TF2, TF1, TF1, TF16, TF1)
DL_TFC108	(TF0, TF0, TF0, TF17, TF1)
DL_TFC109	(TF1, TF0, TF0, TF17, TF1)
DL_TFC110	(TF2, TF1, TF1, TF17, TF1)
DL_TFC111	(TF0, TF0, TF0, TF18, TF1)
DL_TFC112	(TF1, TF0, TF0, TF18, TF1)
DL_TFC113	(TF2, TF1, TF1, 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, DL_TFC58	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC57, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2 , UL_TFC3 , UL_TFC15, UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC59	UL_TFC2, UL_TFC17	DL_TFC0, DL_TFC57, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3 , UL_TFC15, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC60	UL_TFC3, UL_TFC18	DL_TFC0, DL_TFC57, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1 , UL_TFC2 , UL_TFC3, UL_TFC15, UL_TFC18	RB5: 39 RB6: 103 RB7: 60 RB8: 312	RB5: No data RB6: No data RB7: No data RB8: 632
4	DL_TFC4, DL_TFC61	UL_TFC4, UL_TFC19	DL_TFC0, DL_TFC57, UL_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	RB5: 39 RB6: No data RB7: No data RB8: 632
5	DL_TFC5, DL_TFC62	UL_TFC5, UL_TFC20	DL_TFC0, DL_TFC57, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 632
6	DL_TFC6, DL_TFC63	UL_TFC6, UL_TFC21	DL_TFC0, DL_TFC57, 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	RB5: No data RB6: No data RB7: No data RB8: 1272
7	DL_TFC7, DL_TFC64	UL_TFC7, UL_TFC22	DL_TFC0, DL_TFC57, 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	RB5: 39 RB6: No data RB7: No data RB8: 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)
8	DL_TFC8, DL_TFC65	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC57, 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	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
9	DL_TFC9, DL_TFC66	UL_TFC9, UL_TFC24	DL_TFC0, DL_TFC57, 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: 1272	RB5: No data RB6: No data RB7: No data RB8: 2552
10	DL_TFC10, DL_TFC67	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC57, 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: 1272	RB5: 39 RB6: No data RB7: No data RB8: 2552
11	DL_TFC11, DL_TFC68	UL_TFC11, UL_TFC26	DL_TFC0, DL_TFC57, 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: 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
12	DL_TFC12, DL_TFC69	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 5112
13	DL_TFC13, DL_TFC70	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 5112
14	DL_TFC14, DL_TFC71	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 5112

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
15	DL_TFC15, DL_TFC72	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 7672
16	DL_TFC16, DL_TFC73	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 7672
17	DL_TFC17, DL_TFC74	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 7672
18	DL_TFC18, DL_TFC75	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 10232
19	DL_TFC19, DL_TFC76	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 10232
20	DL_TFC20, DL_TFC77	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 10232
21	DL_TFC21, DL_TFC78	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 12792

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
22	DL_TFC22, DL_TFC79	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 12792
23	DL_TFC23, DL_TFC80	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 12792
24	DL_TFC24, DL_TFC81	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 15352
25	DL_TFC25, DL_TFC82	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 15352
26	DL_TFC26, DL_TFC83	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 15352
27	DL_TFC27, DL_TFC84	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 17912
28	DL_TFC28, DL_TFC85	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 17912

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
29	DL_TFC29, DL_TFC86	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 17912
30	DL_TFC30, DL_TFC87	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 20472
31	DL_TFC31, DL_TFC88	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 20472
32	DL_TFC32, DL_TFC89	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 20472
33	DL_TFC33, DL_TFC90	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 23032
34	DL_TFC34, DL_TFC91	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 23032
35	DL_TFC35, DL_TFC92	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 23032

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
36	DL_TFC36, DL_TFC93	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 25592
37	DL_TFC37, DL_TFC94	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 25592
38	DL_TFC38, DL_TFC95	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 25592
39	DL_TFC39, DL_TFC96	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 28152
40	DL_TFC40, DL_TFC97	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 28152
41	DL_TFC41, DL_TFC98	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 28152
42	DL_TFC42, DL_TFC99	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 30712

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
43	DL_TFC43, DL_TFC100	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 30712
44	DL_TFC44, DL_TFC101	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 30712
45	DL_TFC45, DL_TFC102	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 33272
46	DL_TFC46, DL_TFC103	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 33272
47	DL_TFC47, DL_TFC104	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 33272
48	DL_TFC48, DL_TFC105	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 35832
49	DL_TFC49, DL_TFC106	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 35832

Sub-test	Downlink TFCs under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
50	DL_TFC50, DL_TFC107	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 35832
51	DL_TFC51, DL_TFC108	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 38392
52	DL_TFC52, DL_TFC109	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 38392
53	DL_TFC53, DL_TFC110	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 38392
54	DL_TFC54, DL_TFC111	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC57, 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: 2552	RB5: No data RB6: No data RB7: No data RB8: 40952
55	DL_TFC55, DL_TFC112	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC57, 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: 2552	RB5: 39 RB6: No data RB7: No data RB8: 40952
56	DL_TFC56, DL_TFC113	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC57, 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: 2552	RB5: 81 RB6: 103 RB7: 60 RB8: 40952

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)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 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: 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).						

14.2.44.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.
3. At step 15 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 and RB8.
 - 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.
 - for sub-test 3: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: an RLC SDU on RB8 having the content equal to the first 312 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 6: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 8: an RLC SDU on RB8 having the content equal to the first 632 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 10: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
 - for sub-test 11: an RLC SDU on RB8 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.
 - for sub-test 12: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 13: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.

- for sub-test 54: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.
- for sub-test 55: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 and RB7.
- for sub-test 56: an RLC SDU on RB8 having the content equal to the first 2552 bits of the test data sent by the SS in downlink; an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.45 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.45.1 Conformance requirement

See 14.2.4.1.

14.2.45.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.45.

14.2.45.3 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 Streaming / unknown / UL:57.6 DL:57.6 kbps / CS RAB (RB8):

Uplink RLC TM RLC Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 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 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (57.6 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x576	0x148
	TF1, bits	1x39	1x103	1x60	1x576	1x148
	TF2, bits	1x81	N/A	N/A	2x576	N/A
	TF3, bits	N/A	N/A	N/A	3x576	N/A
	TF4, bits	N/A	N/A	N/A	4x576	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)	RB8 (57.6 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x576	0x148
	TF1, bits	1x39	1x103	1x60	1x576	1x148
	TF2, bits	1x81	N/A	N/A	2x576	N/A
	TF3, bits	N/A	N/A	N/A	3x576	N/A
	TF4, bits	N/A	N/A	N/A	4x576	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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 (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_TFC1, DL_TFC16	UL_TFC1, DL_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: 576	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC17	UL_TFC2, DL_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: 576	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC18	UL_TFC3,U L_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: 576	RB5: No data RB6: No data RB7: No data RB8: 576
4	DL_TFC4, DL_TFC19	UL_TFC4, DL_TFC19	DL_TFC0, DL_TFC15, , UL_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: 576	RB5: 39 RB6: No data RB7: No data RB8: 576
5	DL_TFC5, DL_TFC20	UL_TFC5, DL_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: 576	RB5: 81 RB6: 103 RB7: 60 RB8: 576
6	DL_TFC6, DL_TFC21	UL_TFC6, DL_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: 576	RB5: No data RB6: No data RB7: No data RB8: 1152
7	DL_TFC7, DL_TFC22	UL_TFC7, DL_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: 576	RB5: 39 RB6: No data RB7: No data RB8: 2x576

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
8	DL_TFC8, DL_TFC23	UL_TFC8, DL_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: 576	RB5: 81 RB6: 103 RB7: 60 RB8: 2x576
9	DL_TFC9, DL_TFC24	UL_TFC9, DL_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: 576	RB5: No data RB6: No data RB7: No data RB8: 3x576
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: 576	RB5: 39 RB6: No data RB7: No data RB8: 3x576
11	DL_TFC11, DL_TFC26	UL_TFC11, DL_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: 576	RB5: 81 RB6: 103 RB7: 60 RB8: 3x576
12	DL_TFC12, DL_TFC27	UL_TFC12, DL_TFC27	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC12, UL_TFC15, UL_TFC26	RB5: 39 RB6: 103 RB7: 60 RB8: 576	RB5: No data RB6: No data RB7: No data RB8: 4x576
13	DL_TFC13, DL_TFC28	UL_TFC13, DL_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: 576	RB5: 39 RB6: No data RB7: No data RB8: 4x576
14	DL_TFC14, DL_TFC29	UL_TFC14, DL_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: 576	RB5: 81 RB6: 103 RB7: 60 RB8: 4x576

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)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC15 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.						

14.2.45.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified in the actual sub test.
3. At step 15 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 and RB8.
 - 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.
 - 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 and RB7.
 - 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 and RB7.
 - 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.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.46 Void

14.2.47 Void

14.2.48 Void

14.2.49 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.49.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI

14.2.49.1.1 Conformance requirement

See 14.2.4.1.

14.2.49.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.49 for the 20 ms TTI case.

14.2.49.1.3 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 (RB8):

Uplink RLC TM RLC Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 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 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x103	1x60	2x640	1x148
	TF2, bits	1x81	N/A	N/A	N/A	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, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1, TF0, TF1)
UL_TFC9	(TF0, TF0, TF0, TF1, TF1)
UL_TFC10	(TF1, TF0, TF0, TF1, TF1)
UL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x103	1x60	2x640	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1, TF0, TF1)
DL_TFC9	(TF0, TF0, TF0, TF1, TF1)
DL_TFC10	(TF1, TF0, TF0, TF1, TF1)
DL_TFC11	(TF2, TF1, 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_TFC7	UL_TFC1, DL_TFC7	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC8	UL_TFC2, DL_TFC8	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC9	UL_TFC3, DL_TFC9	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: No data RB6: No data RB7: No data RB8: 2x640
4	DL_TFC4, DL_TFC10	UL_TFC4, UL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: 2x640
5	DL_TFC5, DL_TFC11	UL_TFC5, UL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: 2x640
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2, 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.						

See 14.1.1 for test procedure.

14.2.49.1.4 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 RB5 having the same content as sent by the SS; and no data shall be received on RB6, RB7 and RB8.
 - for sub-test 2: RLC SDUs on RB5, RB6 and RB7 having the same content as sent by the SS; and no data shall be received on RB8.
 - for sub-test 3: RLC SDUs on RB8 having the same content as sent by the SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: RLC SDUs on RB5 and RB8 having the same content as sent by the SS; and no data shall be received on RB6 and RB7.
 - for sub-test 5: RLC SDUs on RB5, RB6, RB7 and RB8 having the same content as sent by the SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.49.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI

14.2.49.2.1 Conformance requirement

See 14.2.4.1.

14.2.49.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.49 for the 40 ms TTI case.

14.2.49.2.3 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 (RB8):

Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .	

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x103	1x60	4x640	1x148
	TF2, bits	1x81	N/A	N/A	N/A	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, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1, TF0, TF1)
UL_TFC9	(TF0, TF0, TF0, TF1, TF1)
UL_TFC10	(TF1, TF0, TF0, TF1, TF1)
UL_TFC11	(TF2, TF1, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x103	1x60	4x640	1x148
	TF2, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, 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, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1, TF0, TF1)
DL_TFC9	(TF0, TF0, TF0, TF1, TF1)
DL_TFC10	(TF1, TF0, TF0, TF1, TF1)
DL_TFC11	(TF2, TF1, 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) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC7	UL_TFC1, DL_TFC7	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC8	UL_TFC2, DL_TFC8	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3, DL_TFC9	UL_TFC3, DL_TFC9	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: No data RB6: No data RB7: No data RB8: 4x640
4	DL_TFC4, DL_TFC10	UL_TFC4, DL_TFC10	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC6, UL_TFC7, UL_TFC9, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: 4x640
5	DL_TFC5, DL_TFC11	UL_TFC5, DL_TFC11	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC9, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: 4x640
NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3 and UL_TFC6 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. 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 TB size.						

14.2.49.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 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 and RB8.
 - 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.
 - for sub-test 3: four RLC SDUs on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 4: an RLC SDU on RB5 and four RLC SDUs on RB8 having the same content as sent by SS; and no data shall be received on RB6 and RB7.

- - for sub-test 5: an RLC SDU on RB5, RB6 and RB7; and four RLC SDUs on RB8 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.49a Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH (20ms TTI)

14.2.49a.1 Conformance requirement

See 14.2.4.1.

14.2.49a.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.49a for 20ms TTI case.

14.2.49a.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 (RB8):

Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x53	1x60	2x640	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, 64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF0, TF1)
UL_TFC13	(TF1, TF0, TF0, TF0, TF1)
UL_TFC14	(TF2, TF1, TF0, TF0, TF1)
UL_TFC15	(TF3, TF2, TF0, TF0, TF1)
UL_TFC16	(TF4, TF3, TF0, TF0, TF1)
UL_TFC17	(TF5, TF4, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF0, TF1, TF1)
UL_TFC21	(TF3, TF2, TF0, TF1, TF1)
UL_TFC22	(TF4, TF3, TF0, TF1, TF1)
UL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x53	1x60	2x640	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB2, RB3, RB4, 64 kbps RAB, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1, TF0)
DL_TFC7	(TF1, TF0, TF0, TF1, TF0)
DL_TFC8	(TF2, TF1, TF0, TF1, TF0)
DL_TFC9	(TF3, TF2, TF0, TF1, TF0)
DL_TFC10	(TF4, TF3, TF0, TF1, TF0)
DL_TFC11	(TF5, TF4, TF1, TF1, TF0)
DL_TFC12	(TF0, TF0, TF0, TF0, TF1)
DL_TFC13	(TF1, TF0, TF0, TF0, TF1)
DL_TFC14	(TF2, TF1, TF0, TF0, TF1)
DL_TFC15	(TF3, TF2, TF0, TF0, TF1)
DL_TFC16	(TF4, TF3, TF0, TF0, TF1)
DL_TFC17	(TF5, TF4, TF1, TF0, TF1)
DL_TFC18	(TF0, TF0, TF0, TF1, TF1)
DL_TFC19	(TF1, TF0, TF0, TF1, TF1)
DL_TFC20	(TF2, TF1, TF0, TF1, TF1)
DL_TFC21	(TF3, TF2, TF0, TF1, TF1)
DL_TFC22	(TF4, TF3, TF0, TF1, TF1)
DL_TFC23	(TF5, TF4, 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) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC13	UL_TFC1, UL_TFC13	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC14	UL_TFC2, UL_TFC14	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC14	RB5: 42 RB6: 53 RB7: 60 RB8: 640	RB5: 42 RB6: 53 RB7: No data RB8: No data
3	DL_TFC3, DL_TFC15	UL_TFC3, UL_TFC15	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC15	RB5: 55 RB6: 63 RB7: 60 RB8: 640	RB5: 55 RB6: 63 RB7: No data RB8: No data
4	DL_TFC4, DL_TFC16	UL_TFC4, UL_TFC16	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC16	RB5: 75 RB6: 84 RB7: 60 RB8: 640	RB5: 75 RB6: 84 RB7: No data RB8: No data
5	DL_TFC5, DL_TFC17	UL_TFC5, UL_TFC17	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: No data
6	DL_TFC6, DL_TFC18	UL_TFC6, UL_TFC18	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC18	RB5:81 RB6:103 RB7: 60 RB8: 1280	RB5: No data RB6: No data RB7: No data RB8: 1280

7	DL_TFC7, DL_TFC19	UL_TFC7, UL_TFC19	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC12, UL_TFC13, UL_TFC18, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 1280	RB5: 39 RB6: No data RB7: No data RB8: 1280
8	DL_TFC8, DL_TFC20	UL_TFC8, UL_TFC20	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC12, UL_TFC14, UL_TFC18, UL_TFC20	RB5: 42 RB6: 53 RB7: 60 RB8: 1280	RB5: 42 RB6: 53 RB7: No data RB8: 1280
9	DL_TFC9, DL_TFC21	UL_TFC9, UL_TFC21	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC12, UL_TFC15, UL_TFC18, UL_TFC21	RB5: 55 RB6: 63 RB7: 60 RB8: 1280	RB5: 55 RB6: 63 RB7: No data RB8: 1280
10	DL_TFC10 , DL_TFC22	UL_TFC10 , UL_TFC22	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC12, UL_TFC16, UL_TFC18, UL_TFC22	RB5: 75 RB6: 84 RB7: 60 RB8: 1280	RB5: 75 RB6: 84 RB7: No data RB8: 1280
11	DL_TFC11 , DL_TFC23	UL_TFC11 , UL_TFC23	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC12, UL_TFC17, UL_TFC18, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 1280	RB5: 81 RB6: 103 RB7: 60 RB8: 1280
<p>NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC12 are part of minimum set of TFCs</p> <p>NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 TB size.</p>						

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 and RB8.
 - for sub-test 2, 3, 4: an RLC SDU on RB5, RB6 having the same content as sent by SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8.
 - for sub-test 6: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6, RB7.
 - for sub-test 8, 9, 10: an RLC SDU on RB5, RB6 and RB8 having the same content as sent by SS; and no data shall be received on RB7.
 - for sub-test 11: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.49a.1 Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH (40ms TTI)

14.2.49a.1.1 Conformance requirement

See 14.2.4.1.

14.2.49a.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.49a for 40 ms TTI case .

14.2.49a.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 (RB8):

Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x53	1x60	4x640	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, 64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF0, TF1)
UL_TFC13	(TF1, TF0, TF0, TF0, TF1)
UL_TFC14	(TF2, TF1, TF0, TF0, TF1)
UL_TFC15	(TF3, TF2, TF0, TF0, TF1)
UL_TFC16	(TF4, TF3, TF0, TF0, TF1)
UL_TFC17	(TF5, TF4, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF0, TF1, TF1)
UL_TFC21	(TF3, TF2, TF0, TF1, TF1)
UL_TFC22	(TF4, TF3, TF0, TF1, TF1)
UL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81 (alt. 1x0)	0x103	0x60	0x640	0x148
	TF1, bits	1x39	1x53	1x60	4x640	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB2, RB3, RB4, 64 kbps RAB, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1, TF0)
DL_TFC7	(TF1, TF0, TF0, TF1, TF0)
DL_TFC8	(TF2, TF1, TF0, TF1, TF0)
DL_TFC9	(TF3, TF2, TF0, TF1, TF0)
DL_TFC10	(TF4, TF3, TF0, TF1, TF0)
DL_TFC11	(TF5, TF4, TF1, TF1, TF0)
DL_TFC12	(TF0, TF0, TF0, TF0, TF1)
DL_TFC13	(TF1, TF0, TF0, TF0, TF1)
DL_TFC14	(TF2, TF1, TF0, TF0, TF1)
DL_TFC15	(TF3, TF2, TF0, TF0, TF1)
DL_TFC16	(TF4, TF3, TF0, TF0, TF1)
DL_TFC17	(TF5, TF4, TF1, TF0, TF1)
DL_TFC18	(TF0, TF0, TF0, TF1, TF1)
DL_TFC19	(TF1, TF0, TF0, TF1, TF1)
DL_TFC20	(TF2, TF1, TF0, TF1, TF1)
DL_TFC21	(TF3, TF2, TF0, TF1, TF1)
DL_TFC22	(TF4, TF3, TF0, TF1, TF1)
DL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC13	UL_TFC1, UL_TFC13	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2, DL_TFC14	UL_TFC2, UL_TFC14	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC14	RB5: 42 RB6: 53 RB7: 60 RB8: 640	RB5: 42 RB6: 53 RB7: No data RB8: No data
3	DL_TFC3, DL_TFC15	UL_TFC3, UL_TFC15	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC15	RB5: 55 RB6: 63 RB7: 60 RB8: 640	RB5: 55 RB6: 63 RB7: No data RB8: No data
4	DL_TFC4, DL_TFC16	UL_TFC4, UL_TFC16	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC16	RB5: 75 RB6: 84 RB7: 60 RB8: 640	RB5: 75 RB6: 84 RB7: No data RB8: No data
5	DL_TFC5, DL_TFC17	UL_TFC5, UL_TFC17	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8: No data
6	DL_TFC6, DL_TFC18	UL_TFC6, UL_TFC18	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC12, UL_TFC18	RB5: 81 RB6: 103 RB7: 60 RB8: 2560	RB5: No data RB6: No data RB7: No data RB8: 2560

7	DL_TFC7, DL_TFC19	UL_TFC7, UL_TFC19	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC12, UL_TFC13, UL_TFC18, UL_TFC19	RB5: 39 RB6: 103 RB7: 60 RB8: 2560	RB5: 39 RB6: No data RB7: No data RB8: 2560
8	DL_TFC8, DL_TFC20	UL_TFC8, UL_TFC20	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC8, UL_TFC12, UL_TFC14, UL_TFC18, UL_TFC20	RB5: 42 RB6: 53 RB7: 60 RB8: 2560	RB5: 42 RB6: 53 RB7: No data RB8: 2560
9	DL_TFC9, DL_TFC21	UL_TFC9, UL_TFC21	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC9, UL_TFC12, UL_TFC15, UL_TFC18, UL_TFC21	RB5: 55 RB6: 63 RB7: 60 RB8: 2560	RB5: 55 RB6: 63 RB7: No data RB8: 2560
10	DL_TFC10, DL_TFC22	UL_TFC10, UL_TFC22	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC10, UL_TFC12, UL_TFC16, UL_TFC18, UL_TFC22	RB5: 75 RB6: 84 RB7: 60 RB8: 2560	RB5: 75 RB6: 84 RB7: No data RB8: 2560
11	DL_TFC11, DL_TFC23	UL_TFC11, UL_TFC23	DL_TFC0, DL_TFC12, UL_TFC0, UL_TFC12	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC11, UL_TFC12, UL_TFC17, UL_TFC18, UL_TFC23	RB5: 81 RB6: 103 RB7: 60 RB8: 2560	RB5: 81 RB6: 103 RB7: 60 RB8: 2560
<p>NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6 and UL_TFC12 are part of minimum set of TFCIs</p> <p>NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 TB size.</p>						

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 and RB8.
 - for sub-test 2, 3, 4: an RLC SDU on RB5, RB6 having the same content as sent by SS; and no data shall be received on RB7 and RB8.
 - for sub-test 5: an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8.
 - for sub-test 6: an RLC SDU on RB8 having the same content as sent by SS; and no data shall be received on RB5, RB6 and RB7.
 - for sub-test 7: an RLC SDU on RB5 and RB8 having the same content as sent by SS; and no data shall be received on RB6, RB7.
 - for sub-test 8, 9, 10: an RLC SDU on RB5, RB6 and RB8 having the same content as sent by SS; and no data shall be received on RB7.
 - for sub-test 11: an RLC SDU on RB5, RB6, RB7 and RB8 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.50 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.50.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational /
unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for
DCCH / 20 ms TTI

14.2.50.1.1 Conformance requirement

See 14.2.4.1.

14.2.50.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.50 for the 20 ms TTI case.

14.2.50.1.3 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 and RB6):

	RB5 (64 kbps)	RB6 (64 kbps)
Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> Timer based no explicit Timer_discard	FALSE 100ms	FALSE 100ms
Downlink RLC TM RLC Segmentation indication	FALSE	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 .		

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (64 kbps)	RB6 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x640	0x148
	TF1, bits	2x640	2x640	1x148
	TF2, bits	N/A	N/A	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, TF0, TF1)
UL_TFC5	(TF1, TF0, TF1)
UL_TFC6	(TF0, TF1, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (64 kbps)	RB6 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x640	0x148
	TF1, bits	2x640	2x640	1x148
	TF2, bits	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF0, TF1, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF0, TF1)
DL_TFC5	(TF1, TF0, TF1)
DL_TFC6	(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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC5	UL_TFC1, DL_TFC5	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 640 RB6: 640	RB5: 2x640 RB6: No data
2	DL_TFC2, DL_TFC6	UL_TFC2, DL_TFC6	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 RB6: 640	RB5: No data RB6: 2x640
3	DL_TFC3, DL_TFC7	UL_TFC3, DL_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: 640	RB5: 2x640 RB6: 2x640
NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_ 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. As the TTI for RB5 and 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 TB size.						

14.2.50.1.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1: two RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 2: two RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 3: two RLC SDUs 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.

14.2.50.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 40 ms TTI

14.2.50.2.1 Conformance requirement

See 14.2.4.1.

14.2.50.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.50 for the 40 ms TTI case.

14.2.50.2.3 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 and RB6):

	RB5 (64 kbps)	RB6 (64 kbps)
Uplink RLC TM RLC Segmentation indication Transmission RLC discard CHOICE <i>SDU Discard Mode</i> Timer based no explicit Timer_discard	FALSE 100ms	FALSE 100ms
Downlink RLC TM RLC Segmentation indication	FALSE	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 .		

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (64 kbps)	RB6 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x640	0x148
	TF1, bits	4x640	4x640	1x148
	TF2, bits	N/A	N/A	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, TF0, TF1)
UL_TFC5	(TF1, TF0, TF1)
UL_TFC6	(TF0, TF1, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (64 kbps)	RB6 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x640	0x148
	TF1, bits	4x640	4x640	1x148
	TF2, bits	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF0, TF1, TF0)
DL_TFC3	(TF1, TF1, TF0)
DL_TFC4	(TF0, TF0, TF1)
DL_TFC5	(TF1, TF0, TF1)
DL_TFC6	(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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC5	UL_TFC1, DL_TFC5	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 640 RB6: 640	RB5: 4x640 RB6: No data
2	DL_TFC2, DL_TFC6	UL_TFC2, DL_TFC6	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 RB6: 640	RB5: No data RB6: 4x640
3	DL_TFC3, DL_TFC7	UL_TFC3, DL_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: 640	RB5: 4x640 RB6: 4x640
NOTE1: UL_TFC0, UL_TFC1, UL_TFC2, UL_ 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. As the TTI for RB5 and 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 TB size.						

14.2.50.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1: four RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 2: four RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.

- for sub-test 3: four RLC SDUs 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.

14.2.51 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

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 <i>SDU Discard Mode</i> 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 TFCs	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
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

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
NOTE 1: UL_TFC0, UL_TFC1, UL_TFC5 and UL_TFC10 are part of minimum set of TFCs.						
NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. 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 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 TFCs 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.

14.2.51.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:64 DL:64 kbps / PS RAB

14.2.51.2.1 Conformance requirement

See 14.2.4.1.

14.2.51.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51 for the 40 ms TTI case.

14.2.51.2.3 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 Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .		

See 14.1.2 for test procedure.

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	(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)	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

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 TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
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
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_TFC11, UL_TFC15, UL_TFC15	RB5: 640 RB6: 312	RB5: 4x640 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_TFC16	RB5: 640 RB6: 312	RB5: 4x640 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: 4x640 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: 4x640 RB6: 952

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)
9	DL_TFC9, DL_TFC19	UL_TFC9, DL_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: 4x640 RB6: 1272
NOTE1: UL_TFC0, UL_TFC1, UL_TFC5, UL_ and UL_TFC10 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 RB5 and 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 for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).and .the UL RLC SDU size for RB5 has been set equal to the uplink TB size .						

14.2.51.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1, 2, 3, 4: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 5: two RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 6, 7, 8 and 9: two RLC SDUs on RB5 and one RLC SDU on 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 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

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 8 kbps)	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 TFCs (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: 1280 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: 1280 RB6: 312	RB5: 1280 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: 1280 RB6: 312	RB5: 1280 RB6: 312

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC2_and UL_TFC4 are part of minimum set of TFCs

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 TFCs 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

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 TFCs (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: 2560 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: 2560 RB6: 312	RB5: 2560 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: 2560 RB6: 312	RB5: 2560 RB6: 312

NOTE1: UL_TFC0, UL_TFC1, UL_TFC2_ and UL_TFC4 are part of minimum set of TFCs
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 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 TFCs 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

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 TFCs (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: 1280 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: 1280 RB6: 312	RB5: 1280 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: 1280 RB6: 312 (note 3)	RB5: 1280 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: 1280 RB6: 312 (note 4)	RB5: 1280 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: 1280 RB6: 312 (note 4)	RB5: 1280 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: 1280 RB6: 312 (note 4)	RB5: 1280 RB6: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitly tested	Restricted UL TFCIs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
<p>NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCIs.</p> <p>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).</p> <p>NOTE 3: RB6 (TF1): For sub-tests where uplink transport format TF1 (1x336) is used then no adaptation 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).</p> <p>NOTE 4: RB8 (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).</p>						

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

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 TFCs (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: 2560 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: 2560 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: 2560 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: 2560 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: 2560 RB6: 312	RB5: 2560 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: 2560 RB6: 312 (note 3)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 RB6: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (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: 2560 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: 2560 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: 2560 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: 2560 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: 2560 RB6: 312	RB5: 2560 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: 2560 RB6: 312 (note 3)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 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: 2560 RB6: 312 (note 4)	RB5: 2560 RB6: 1272

NOTE 1: UL_TFC0, UL_TFC1, UL_TFC3 and UL_TFC6 are part of minimum set of TFCs.

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).

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.

14.2.52 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.52.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:64 DL:128 kbps / PS RAB

14.2.52.1.1 Conformance requirement

See 14.2.4.1.

14.2.52.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.52 for the 20 ms TTI case.

14.2.52.1.3 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 Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .		

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 64 kbps)	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)	RB6 (I/B 128 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	4x336	N/A
	TF4, bits	N/A	8x336	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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC11	UL_TFC1, DL_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, DL_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, DL_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: 1272
4	DL_TFC4, DL_TFC14	UL_TFC4, DL_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: 2552
5	DL_TFC5, DL_TFC15	UL_TFC5, DL_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, DL_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, DL_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, DL_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: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
9	DL_TFC9, DL_TFC19	UL_TFC9, DL_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: 2552
NOTE1: UL_TFC0, UL_TFC1, UL_TFC5 and UL_TFC10 are part of minimum set of TFCs 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 RB5 and 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 for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).and .the UL RLC SDU size for RB5 has been set equal to the uplink TB size.						

14.2.52.1.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1, 2, 3, 4: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 5: two RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 6: two RLC SDUs on RB5 and one RLC SDU on RB6 having the same content as sent by SS.
 - For sub-test 3: RLC SDU on RB6 having the content equal to the first 952 bits of the test data sent by the SS in downlink;
 - For sub-test 4: RLC SDU on RB6 having the content equal to the first 1272 bits of the test data sent by the SS in downlink;
 - for sub-test 8: an RLC SDU on RB6 having the content equal to the first 952 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS.
 - for sub-test 9: an RLC SDU on RB6 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.52.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:64 DL:128 kbps / PS RAB

14.2.52.2.1 Conformance requirement

See 14.2.4.1.

14.2.52.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.51 for the 40 ms TTI case.

14.2.52.2.3 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 Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .		

See 14.1.2 for test procedure.

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	(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)	RB6 (I/B 128 kbps)	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

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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC11	UL_TFC1, DL_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, DL_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, DL_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: 1272
4	DL_TFC4, DL_TFC14	UL_TFC4, DL_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: 2552

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)
5	DL_TFC5, DL_TFC15	UL_TFC5, DL_TFC15	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 640 RB6: 312	RB5: 4x640 RB6: No data
6	DL_TFC6, DL_TFC16	UL_TFC6, DL_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: 4x640 RB6: 312
7	DL_TFC7, DL_TFC17	UL_TFC7, DL_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: 4x640 RB6: 632
8	DL_TFC8, DL_TFC18	UL_TFC8, DL_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: 4x640 RB6: 1272
9	DL_TFC9, DL_TFC19	UL_TFC9, DL_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: 4x640 RB6: 2552
<p>NOTE1: UL_TFC0, UL_TFC1, UL_TFC5_ and UL_TFC10 are part of minimum set of TFCIs</p> <p>NOTE2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.</p> <p>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 RB5 and 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 for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).and .the UL RLC SDU size for RB5 has been set equal to the uplink TB size .</p>						

14.2.52.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1, 2, 3, 4: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 5: four RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.

- for sub-test 6: four RLC SDUs on RB5 and one RLC SDU on RB6 having the same content as sent by SS.
- For sub-test 3: RLC SDU on RB6 having the content equal to the first 652 bits of the test data sent by the SS in downlink;
- For sub-test 4: RLC SDU on RB6 having the content equal to the first 1272 bits of the test data sent by the SS in downlink;
- for sub-test 8: an RLC SDU on RB6 having the content equal to the first 652 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS.
- for sub-test 9: an RLC SDU on RB6 having the content equal to the first 1272 bits of the test data sent by the SS in downlink; an RLC SDU on RB5 having the same content as sent by SS.

4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.53 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + Interactive or background / UL:128 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.53.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI + Interactive or background / UL:128 DL:128 kbps / PS RAB

14.2.53.1.1 Conformance requirement

See 14.2.4.1.

14.2.53.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.53 for the 20 ms TTI case.

14.2.53.1.3 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 Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .	

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 128 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	4x336	N/A
	TF4, bits	N/A	8x336	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)	RB6 (I/B 128 kbps)	DCCH
TFS	TF0, bits	0x640	0x336	0x148
	TF1, bits	2x640	1x336	1x148
	TF2, bits	N/A	2x336	N/A
	TF3, bits	N/A	4x336	N/A
	TF4, bits	N/A	8x336	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)

TFCI	(RB5, RB6, DCCH)
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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, DL_TFC11	UL_TFC1, DL_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, DL_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, DL_TFC13	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC10, UL_TFC13	RB5: 640 RB6: 1272	RB5: No data RB6: 1272
4	DL_TFC4, DL_TFC14	UL_TFC4, DL_TFC14	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC10, UL_TFC14	RB5: 640 RB6: 2552	RB5: No data RB6: 2552
5	DL_TFC5, DL_TFC15	UL_TFC5, DL_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, DL_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, DL_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, DL_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: 1272	RB5: 2x640 RB6: 1272
9	DL_TFC9, DL_TFC19	UL_TFC9, DL_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: 2552	RB5: 2x640 RB6: 2552

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)
NOTE1: UL_TFC0, UL_TFC1, UL_TFC5 and UL_TFC10 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 RB5 and 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 for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).and .the UL RLC SDU size for RB5 has been set equal to the uplink TFS size under test.						

14.2.53.1.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1, 2, 3, 4: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 5: two RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 6, 7, 8 and 9: two RLC SDUs on RB5 and one RLC SDU on RB6 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.53.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI + Interactive or background / UL:128 DL:128 kbps / PS RAB

14.2.53.2.1 Conformance requirement

See 14.2.4.1.

14.2.53.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.53 for the 40 ms TTI case.

14.2.53.2.3 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 Transmission RLC discard CHOICE <i>SDU Discard Mode</i> 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 .		

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (Conv. 64 kbps)	RB6 (I/B 128 kbps)	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

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)	RB6 (I/B 128 kbps)	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

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 (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
1	DL_TFC1, UL_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, UL_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, UL_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: 1272	RB5: No data RB6: 1272
4	DL_TFC4, UL_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: 2552	RB5: No data RB6: 2552
5	DL_TFC5, UL_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: 4x640 RB6: No data
6	DL_TFC6, UL_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: 4x640 RB6: 312
7	DL_TFC7, UL_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: 4x640 RB6: 632
8	DL_TFC8, UL_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: 4x640 RB6: 1272	RB5: 4x640 RB6: 1272

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note1)	UL RLC SDU size (bits) (note2)	Test data size (bits) (note2)
9	DL_TFC9, UL_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: 2552	RB5: 4x640 RB6: 2552
NOTE1: UL_TFC0, UL_TFC1, UL_TFC5 and UL_TFC10 are part of minimum set of TFCs 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 RB5 and 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 for RB6 has been set equal to the uplink TFS size under test minus 8 bits (size of 7 bit length indicator and expansion bit).and .the UL RLC SDU size for RB5 has been set equal to the uplink TFS size under test.						

14.2.53.2.4 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 15b the UE transmitted transport format shall be within the set of restricted TFCs as specified for the actual subtest.
3. At step 15 the UE shall return
 - for sub-test 1, 2, 3, 4: an RLC SDU on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 5: four RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 6, 7, 8 and 9: four RLC SDUs on RB5 and one RLC SDU on RB6 having the same content as sent by SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.54 Void

14.2.55 Void

14.2.56 Interactive or background / UL:8 DL:8 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.56.1 Conformance requirement

See 14.2.4.1.

14.2.56.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.56.

14.2.56.3 Method of test

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 + RB6 (2x8 kbps)	DCCH
TFS	TF0, bits	0x340	0x148
	TF1, bits	1x340	1x148

Uplink TFCS:

TFCI	(RB5 + RB6, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF0, TF1)
UL_TFC3	(TF1, TF1)

Downlink TFS:

		RB5 + RB6 (2x8 kbps)	DCCH
TFS	TF0, bits	0x340	0x148
	TF1, bits	1x340	1x148

Downlink TFCS:

TFCI	(RB5+RB6, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(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_TFC3	UL_TFC1, UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312 RB6: 312	RB5: 312 RB6: no data
2	DL_TFC1, DL_TFC3	UL_TFC1, UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 312 RB6: 312	RB5: no data RB6: 312

[NOTE 1](#): UL_TFC0, UL_TFC1 and UL_TFC2 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 and 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 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).

14.2.56.4 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.
 - for sub-test 2: an RLC SDU on RB6; and no data shall be received on RB5.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.57 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.

14.2.57.1 Conformance requirement

See 14.2.4.1.

14.2.57.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.57.

14.2.57.3 Method of test

See 14.1.2 for test procedure.

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)

Downlink 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

Downlink TFCS:

TFCI	(RB5 + RB6, 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 DL_TFC6	UL_TFC1 DL_TFC6	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312 RB6: 312	RB5: 312 RB6: No data
2	DL_TFC2 DL_TFC7	UL_TFC2 DL_TFC7	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632 RB6: 632	RB5: 632 RB6: No data
3	DL_TFC3 DL_TFC8	UL_TFC3 DL_TFC8	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952 RB6: 952	RB5: 952 RB6: No data
4	DL_TFC4 DL_TFC9	UL_TFC4 DL_TFC9	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272 RB6: 1272	RB5: 1272 RB6: No data
5	DL_TFC4 DL_TFC9	UL_TFC4 DL_TFC9	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272 RB5: 1272	RB5: No data RB6: 1272
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 and 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 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).						

14.2.57.4 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 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS in RB5.
 - for sub-test 5: an RLC SDU on RB6 having the same content as the DL RLC SDU sent by the SS in RB6.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.58 Streaming / unknown / UL:16 DL:64 kbps / PS RAB + Interactive or background / UL:8 DL:8 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

14.2.58.1 Conformance requirement

See 14.2.4.1.

14.2.58.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.58.

14.2.58.3 Method of test

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 uplink (16 kbps, 20 ms TTI)	RB6 (8 kbps)	DCCH
TFS	TF0, bits	0x336	0x336	0x148
	TF1, bits	1x336	1x336	1x148

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, TF0, TF1)
UL_TFC5	(TF1, TF0, TF1)
UL_TFC6	(TF0, TF1, TF1)
UL_TFC7	(TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (64 kbps, 40 ms TTI)	RB6 (8 kbps)	DCCH
TFS	TF0, bits	0x656	0x336	0x148
	TF1, bits	1x656	1x336	1x148
	TF2, bits	2x656	N/A	N/A
	TF3, bits	4x656	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF2, TF0, TF0)
DL_TFC3	(TF3, TF0, TF0)
DL_TFC4	(TF0, TF1, TF0)
DL_TFC5	(TF1, TF1, TF0)
DL_TFC6	(TF2, TF1, TF0)
DL_TFC7	(TF3, TF1, TF0)
DL_TFC8	(TF0, TF0, TF1)
DL_TFC9	(TF1, TF0, TF1)
DL_TFC10	(TF2, TF0, TF1)
DL_TFC11	(TF3, TF0, TF1)
DL_TFC12	(TF0, TF1, TF1)
DL_TFC13	(TF1, TF1, TF1)
DL_TFC14	(TF2, TF1, TF1)
DL_TFC15	(TF3, 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_TFC9	UL_TFC1, UL_TFC5	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 632 RB6: 312	RB5: 632 RB6: no data
2	DL_TFC2, DL_TFC10	UL_TFC1, UL_TFC5	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 632 RB6: 312	RB5: 1272 RB6: no data
3	DL_TFC3, DL_TFC11	UL_TFC1, UL_TFC5	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC5	RB5: 632 RB6: 312	RB5: 2552 RB6: no data
4	DL_TFC4, DL_TFC12	UL_TFC2, UL_TFC6	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 632 RB6: 312	RB5: no data RB6: 312
5	DL_TFC5, DL_TFC13	UL_TFC3, UL_TFC7	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6	RB5: 632 RB6: 312	RB5: 632 RB6: 312
6	DL_TFC6, DL_TFC14	UL_TFC3, UL_TFC7	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6	RB5: 632 RB6: 312	RB5: 1272 RB6: 312
7	DL_TFC7, DL_TFC15	UL_TFC3, UL_TFC7	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7	RB5: 632 RB6: 312	RB5: 2552 RB6: 312
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC4 are part of minimum set of TFCIs.</p> <p>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). As the uplink TTI for RB5 is 20 ms while the downlink TTI is 40 ms then, to achieve continous data transmission in uplink the size of the uplink RLC SDU has been set such that it will be transmitted over two subsequent TTIs, i.e. UL RLC SDU size has been set to two times the payload size of the UL TF under test minus 8 bits (the size of a 7 bit length indicator and expansion bit). 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 has been set equal to the uplink TFS size minus 8 bits (the size of a 7 bit length indicator and expansion bit).</p>						

14.2.58.4 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 RB5 having the same content as sent by the SS; and no data shall be received on RB6.
 - for sub-test 2 and 3: RLC SDUs on RB5 having the first 632 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB6.
 - for sub-test 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 and RB6 having the same content as sent by the SS.
 - for sub-test 6 and 7: RLC SDUs on RB5 having the first 632 bits equal to the content of the test data sent by the SS in downlink; and RLC SDUs on RB6 having the same content as sent by the SS.
4. At step 15b the UE shall send at least one MEASUREMENT REPORT message.

14.2.59 Void

14.2.60 Void

14.2.61 Void

14.2.62 Void

14.2.63 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (Rel-5)

14.2.63.1 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH/ 10 ms TTI

TBD

14.2.63.2 Interactive or background / UL:64 DL:768 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH / 20 ms TTI

14.2.63.2.1 Conformance requirement

See 14.2.4.1.

14.2.63.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.63 for the downlink 20 ms TTI case.

14.2.63.2.3 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 (768 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
	TF9, bits	28x336	N/A
	TF10, bits	32x336	N/A
	TF11, bits	36x336	N/A
	TF12, bits	40x336	N/A
	TF13, bits	44x336	N/A
TF14, bits	48x336	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	(TF0, TF1)
DL_TFC16	(TF1, TF1)
DL_TFC17	(TF2, TF1)
DL_TFC18	(TF3, TF1)
DL_TFC19	(TF4, TF1)
DL_TFC20	(TF5, TF1)
DL_TFC21	(TF6, TF1)
DL_TFC22	(TF7, TF1)
DL_TFC23	(TF8, TF1)
DL_TFC24	(TF9, TF1)
DL_TFC25	(TF10, TF1)
DL_TFC26	(TF11, TF1)
DL_TFC27	(TF12, TF1)
DL_TFC28	(TF13, TF1)
DL_TFC29	(TF14, 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_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, 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_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 8952	RB5: 8952
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
11	DL_TFC11	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 11512	RB5: 11512
12	DL_TFC12	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
13	DL_TFC13	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 14072	RB5: 14072

14	DL_TFC14	UL_TFC4	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>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 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.</p>						

See 14.1.1 for test procedure.

14.2.63.2.4 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 14: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2 and 4 to 14: 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.

14.3 Combinations on PDSCH and DPCH

14.3.1 Void

14.3.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.2.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.3.2.1.1 Conformance requirement

See 14.2.4.1.

14.3.2.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 10 ms TTI case.

14.3.2.1.3 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)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_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_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCIs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: 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.</p>						

See 14.1.1 for test procedure.

14.3.2.1.4 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 and 5: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4 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 DL RLC SDU sent by the SS.

14.3.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.3.2.2.1 Conformance requirement

See 14.2.4.1.

14.3.2.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 20 ms TTI case.

14.3.2.2.3 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)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354
	DSCH_TF6, bits	16x354
	DSCH_TF7, bits	20x354
	DSCH_TF8, bits	24x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCs:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_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_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912	RB5: 1272
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 6392	RB5: 6392
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672

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: 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.

See 14.1.1 for test procedure.

14.3.2.2.4 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, 5, 6, 7 and 8: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 4, 5, 6, 7 and 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 DL RLC SDU sent by the SS.

14.3.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.3.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 10 ms TTI

14.3.3.1.1 Conformance requirement

See 14.2.4.1.

14.3.3.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 10 ms TTI case.

14.3.3.1.3 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)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
DSCH_TF10, bits	32x674	

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, <u>UL_TFC1</u> , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
<p>NOTE 1: <u>UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</u></p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: 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.</p>						

See 14.1.1 for test procedure.

14.3.3.1.4 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, 5, 6, 7, 8, 9 and 10: RB5/TF4 (4x336).
3. At step 15 the UE shall return
 - for sub-test 1, 2, 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 DL RLC SDU sent by the SS.

14.3.3.2 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 20 ms TTI

14.3.3.2.1 Conformance requirement

See 14.2.4.1.

14.3.3.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 20 ms TTI case.

14.3.3.2.3 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)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674
	DSCH_TF11, bits	36x674
	DSCH_TF12, bits	40x674
	DSCH_TF13, bits	44x674
	DSCH_TF14, bits	48x674
	DSCH_TF15, bits	52x674
	DSCH_TF16, bits	56x674
	DSCH_TF17, bits	60x674
	DSCH_TF18, bits	64x674

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10
DL_DSCH_TFC11	DSCH_TF11
DL_DSCH_TFC12	DSCH_TF12
DL_DSCH_TFC13	DSCH_TF13
DL_DSCH_TFC14	DSCH_TF14
DL_DSCH_TFC15	DSCH_TF15
DL_DSCH_TFC16	DSCH_TF16
DL_DSCH_TFC17	DSCH_TF17
DL_DSCH_TFC18	DSCH_TF18

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_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_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2552
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 20232
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
11	DL_DSCH_TFC11	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 23032	RB5: 23032
12	DL_DSCH_TFC12	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25592	RB5: 25592

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs (note 1)	UL RLC SDU size (bits) (note 2)	Test data size (bits) (note 2)
13	DL_DSCH_TFC13	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 28152	RB5: 28152
14	DL_DSCH_TFC14	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 30712	RB5: 30712
15	DL_DSCH_TFC15	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 33272	RB5: 33272
16	DL_DSCH_TFC16	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 35832	RB5: 35832
17	DL_DSCH_TFC17	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 38392	RB5: 38392
18	DL_DSCH_TFC18	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1 , UL_TFC4, UL_TFC5, UL_TFC9	RB5: 40952	RB5: 40952
<p>NOTE 1: UL_TFC0, UL_TFC1 and UL_TFC5 are part of minimum set of TFCs.</p> <p>NOTE 2: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: 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.</p>						

See 14.1.1 for test procedure.

14.3.3.2.4 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-test 1, 2, 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 DL RLC SDU sent by the SS.

CHANGE REQUEST

34.123-1 CR 832 # rev **-** # Current version: **5.7.1**

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 GMM test case 12.4.2.5a		
Source:	# Ericsson		
Work item code:	# TEI	Date:	# 2004-05-03
Category:	# F	Release:	# REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# When the routing area update procedure is rejected with cause 13 in cell B in GMM test case 12.4.2.5a (Test procedure 1) then the Update Status is set to U3 ROAMING NOT ALLOWED in the UE. When UE camp on cell A again it could still be IMSI attached in the SS but from an UE point of view it can be considered as not updated and thus would use type 'combined RA/LA update with IMSI attach' to ensure that the MSC-SGSN association will be updated. An update of the MSC is required to set Update Status to U3 UPDATED. Thus the UE may use the update type 'Combined RA/LA updating with IMSI attach' in the routing area update request in step 20.
Summary of change:	# 12.4.2.5a (Test procedure 1): Added 'Combined RA/LA updating with IMSI attach' to the checked Update type IE in step 20 in the expected sequence.
Consequences if not approved:	# Test case fail good UE.

Clauses affected:	# 12.4.2.5a (Test procedure 1)								
Other specs Affected:	<table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	#	X	#	X	#	X
Y	N								
#	X								
#	X								
#	X								
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.

12.4.2.5a 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 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 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		
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 "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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		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)
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' P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = P-TMSI-2
9a		SS		SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this 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		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)
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' P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = P-TMSI-2
20a		SS		The SS starts integrity protection.
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile 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	
32		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)
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 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 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		
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 "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 PS / 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 PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
5a		SS		The SS releases the RRC connection.
7		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)
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' P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = P-TMSI-2
9a		SS		The SS starts integrity protection
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this 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 PS / IMSI attach' Mobile identity = P-TMSI_2 Attach Request shall not carry TMSI status.
20a	<-		AUTHENTICATION AND CIPHERING REQUEST	
20b	->		AUTHENTICATION AND CIPHERING RESPONSE	
20c	SS			The SS starts integrity protection.
21	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile 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 PS/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 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.

CHANGE REQUEST

⌘ **34.123-1 CR 835** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 A-GPS test cases		
Source:	⌘ Ericsson, Motorola, Qualcomm		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2004
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> 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 no details of the A-GPS protocol test cases.
Summary of change:	<p>⌘ In 17.2.1.2 "Simulated A-GPS environment", it is stated that the number and the strength of the satellite signals generated from the SS shall be good enough to not prevent the UE to make a positioning estimate. Specifically it is stated that the GPS time-of-week in the assistance data shall be have the tolerance of +/- 2 s relative to the GPS time in the system simulator.</p> <p>A new subclause 17.2.1.3 "A-GPS assistance data sets" is added.</p> <p><u>The following test case is updated:</u></p> <p>17.2.2.1 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / with USIM/ Limited Assistance Data</p> <p>- It is proposed that satellite information is included in the assistance data and therefore the title has to change.</p> <p><u>The following test case is removed:</u></p> <p>17.2.3.1 LCS Mobile originated location request/ UE-Based GPS/ Assistance data sent in multiple measurement control messages</p> <p><u>The following test cases are added:</u></p> <p>17.2.4.1 "LCS Mobile terminated location request/ UE-Based GPS"</p> <p>17.2.4.2 "LCS Mobile-terminated location request/ UE-Based GPS/ Request of additional assistance data/ Success"</p>

Consequences if not approved:	⌘	The A-GPS test cases would remain unspecified.										
Clauses affected:	⌘	17.2.1.2, 17.2.1.3 (new), 17.2.2.1, 17.2.3.1, 17.2.4.1 (new), 17.2.4.2 (new)										
Other specs affected:	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	Other core specifications Test specifications O&M Specifications	⌘ TS 34.123-2
		Y	N									
			X									
X												
	X											
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 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

~~FFS~~. During A-GPS tests in clause 17.2, the 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.

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 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.

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 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 REPORT messages.

First MEASUREMENT CONTROL MESSAGE:

- UE positioning GPS assistance data	Set according to 17.2.1.2
- UE positioning GPS reference time	Set according to 17.2.1.2
- GPS week	Not present
- GPS TOW msec	Not present
- 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)
- 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 1-4
- 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	Not present
- 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
- 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	Not present
- 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:

FFS.

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:

<u>- UE positioning GPS assistance data</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS reference time</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS reference UE position</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS DGPS corrections</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS navigation model</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS ionospheric model</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS UTC model</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS almanac</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS acquisition assistance</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>
<u>- UE positioning GPS real-time integrity</u>	<u>Set according to 17.2.1.2 if requested by the UE</u>

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.

17.2.2 Assisted GPS Network Induced Tests

17.2.2.1 LCS Network Induced location request/ UE-Based GPS/ Emergency Call / with USIM ~~/Limited Assistance Data~~

~~FFS.~~

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 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):

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

MEASUREMENT CONTROL (Step 15):

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

MEASUREMENT CONTROL (Step 16):

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

MEASUREMENT REPORT (Step 17):

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

17.2.2.1.5 Test requirements

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

After step 16 the UE shall respond with a MEASUREMENT REPORT message of either "Type 1" or "Type 2" as specified in subclause 17.2.2.1.4.

17.2.3 Assisted GPS Mobile Originated Tests

17.2.3.1 ~~LCS Mobile originated location request/ UE-Based GPS/ Assistance data sent in multiple measurement control messages~~ Void

~~FES.~~

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 dialogue 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 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

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

Specific Message Contents

REGISTER (Step 1)

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

RELEASE COMPLETE (Step 3)

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

MEASUREMENT CONTROL (Step 4):

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

MEASUREMENT CONTROL (Step 5):

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

MEASUREMENT CONTROL (Step 6):

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

MEASUREMENT REPORT (Step 7)

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

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 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 “ $T_{\text{UTRAN-GPS}}$ 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 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comments</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<-	<u>REGISTER</u>	Call Independent SS containing Facility IE Location Notification Invoke message set to notifyLocationAllowed
<u>2</u>		<u>UE</u>		The UE displays information about LCS client
<u>3</u>		->	<u>RELEASE COMPLETE</u>	The UE terminates the dialogue
<u>4</u>		<:-	<u>MEASUREMENT CONTROL</u>	No assistance data, and "Additional Assistance Data Request" IE set to TRUE. Positioning error report with request for further assistance data. Reporting mode: Periodical reporting Amount of reporting: 1 Reporting interval: 64000
<u>5</u>		->	<u>MEASUREMENT REPORT</u>	
<u>6</u>		<:-	<u>MEASUREMENT CONTROL</u>	
<u>7</u>		<:-	<u>MEASUREMENT CONTROL</u>	
<u>8</u>		<:-	<u>MEASUREMENT CONTROL</u>	Measurement report message containing UE position estimate.
<u>9</u>		->	<u>MEASUREMENT REPORT</u>	

Specific Message Contents

REGISTER (Step 1)

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

RELEASE COMPLETE (Step 3)

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

MEASUREMENT CONTROL (Step 4):

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

MEASUREMENT REPORT (Step 5):

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

MEASUREMENT CONTROL (Step 6):

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

MEASUREMENT CONTROL (Step 7):

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

MEASUREMENT CONTROL (Step 8):

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

MEASUREMENT REPORT (Step 9):

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

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 the UE shall send a MEASUREMENT REPORT message containing a valid UE position estimate.

CHANGE REQUEST

34.123-1 CR 842 # rev **-** # Current version: **5.7.1**

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 HSDPA RRC test cases		
Source:	# Ericsson		
Work item code:	# HSDPA	Date:	# 14/05/2004
Category:	# F	Release:	# REL-5
	Use <u>one</u> 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 <u>one</u> 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: #	<ol style="list-style-type: none"> 1. During a serving HS-DSCH cell change, MAC-hs reset is now performed using the Physical channel reconfiguration procedure instead of Transport Channel Reconfiguration. This was changed in the CR 2264 into TS 25.331 v5.8.0 approved by TSG-RAN in March 2004. 2. The test case 8.2.6.39 "Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change without MAC-hs reset)" agreed at the last meeting in T1-040399 was not implemented in the spec. 3. A measurement report is needed from the UE in order to set the correct value of the DPCH frame offset in the ACTIVE SET UPDATE message.
Summary of change: #	<p>8.2.1.27 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (two radio links, start of HS-DSCH reception): Conformance requirements corrected. The testcase now uses two cells and a measurement report.</p> <p>8.2.2.36 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Start and stop of HS-DSCH reception): Conformance requirements corrected. The second test purpose is deleted since it cannot be verified in the RRC test environment that the UE uses the stored HS-DSCH configuration.</p> <p>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</p>

HS-DSCH reception):
Conformance requirements corrected.

8.2.4.35 Transport Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change with MAC-hs reset):
This test case is deleted and replaced with 8.2.6.39b since the MAC-hs reset is normally performed by the Physical Channel Reconfiguration procedure.

8.2.6.39a Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change without MAC-hs reset):
Testcase added according to the previously agreed T1-040399.

8.2.6.39b Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change with MAC-hs reset):
New test case that replaces 8.2.4.35.

Consequences if not approved: ⌘ Misalignment with the core specification. A previously agreed test case remains as not present in the test specification.

Clauses affected: ⌘ 8.2.1.27, 8.2.2.36, 8.2.2.37, 8.2.4.35, 8.2.6.39a (new), 8.2.6.39b (new)

Other specs affected:

Y	N
	X
X	
	X

Other core specifications
Test specifications
O&M Specifications

⌘ TS 34.123-2

Other comments: ⌘ Affects 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.

8.2.1.27 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (two radio links, start of HS-DSCH reception)

8.2.1.27.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.27.2 Conformance requirement

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.

...

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 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;

~~1> 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";~~

- 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".

~~1> if the IE "HS-DSCH Timeslot Configuration" is included;~~

~~2> store the received configuration.~~

...

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".

~~1> in the case of TDD:~~

~~2> receive the HS-SCCH(s) according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link;~~

~~2> receive the HS-SICH according to the IEs "Timeslot" and "Channelisation Code" on the serving HS-DSCH radio link.~~

...

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

8.2.1.27.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to HS-DSCH according to the received RADIO BEARER SETUP message when having two radio links established.

8.2.1.27.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 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 8.2.1.27

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-60	-70	-60

[Table 8.2.1.27 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.](#)

The UE is in CELL_DCH state. Only signalling radio bearers have been established [in cell 1](#).

[SS configures its downlink transmission power settings according to columns "T1" in table 8.2.1.27. UE shall be triggered to transmit 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.](#) The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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.

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. After the UE receives this message, it configures them and establishes a radio access bearer **and cell 1 shall be assigned as the serving HS-DSCH cell**. [\[Note to MCC: please remove highlighting\]](#). 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		
0a				SS configures its downlink transmission power settings according to columns "T1" in table 8.2.1.27.
0b		→	MEASUREMENT REPORT	See specific message contents for this message
1		←	ACTIVE SET UPDATE	The SS instructs the UE to add cell 2 in the active set.
2		→	ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
3		←	RADIO BEARER SETUP	
4		→	RADIO BEARER SETUP COMPLETE	
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

MEASUREMENT REPORT (Step 0b)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> - <u>Message authentication code</u> - <u>RRC Message sequence number</u>	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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
<u>Measurement identity</u> <u>Measured Results</u> - <u>Intra-frequency measured results</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u>	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important) Checked that this IE is absent Checked that this IE is absent Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - <u>Intra-frequency measurement event results</u> - <u>Intra-frequency event identity</u> - <u>Cell measurement event results</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u>	1a Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 1)

Information Element	Value/remark
Radio link addition information <ul style="list-style-type: none"> - Primary CPICH Info - Primary scrambling code - Downlink DPCH info for each RL - CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT cell identity - Close loop timing adjustment mode - TFCI combining indicator - SCCPCH information for FACH 	Primary scrambling code of Cell 2 FDD P-CPICH may be used. Calculated value from Cell synchronisation information Not present This IE is repeated for all existing downlink DPCHs allocated to the UE Not present Refer to the parameter set in TS 34.108 For each DPCH, assign the same code number in the current code given in cell 1. Not present 1 Not present Not present TRUE Not present

RADIO BEARER SETUP (Step 3)

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
Downlink information for each 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 - Serving HS-DSCH radio link indicator - Downlink DPCH info for each RL - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - SCCPCH information for FACH - Downlink information for each radio link - Choice mode - Primary CPICH info - Primary scrambling code - PDSCH with SHO DCH info - PDSCH code mapping - Serving HS-DSCH radio link indicator - Downlink DPCH info for each RL - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info - DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - SCCPCH information for FACH	(for cell 1) FDD Ref. to the Default setting in TS34.108 clause 6.1 (FDD) Not Present Not Present TRUE Not present Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 Not Present 1 Reference to TS34.108 clause 6.10 Parameter Set 0 No change 0 Not Present Not Present Not Present (for cell 2) FDD Ref. to the Default setting in TS34.108 clause 6.1 (FDD) Not Present Not Present FALSE Not present Primary CPICH may be used Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 Not Present 1 Reference to TS34.108 clause 6.10 Parameter Set 0 No change 0 Not Present Not Present Not Present

8.2.1.27.5 Test requirements

After step 43, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

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.

...

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 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 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;

~~1> 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";~~

- 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".

~~1> if the IE "HS-DSCH Timeslot Configuration" is included:~~

~~2> store the received configuration.~~

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.

Reference

3GPP TS 25.331 clauses [8.2.2](#), 8.6.3.1, 8.6.6.32

8.2.2.36.3 Test purpose

~~1.~~ To confirm that the UE starts and stops receiving the HS-DSCH according to the received RADIO BEARER RECONFIGURATION message. [\[Note to MCC: Paragraph style change\]](#)

~~2.~~ To confirm that the UE uses the stored HS-DSCH configuration when the HS-DSCH reception is started.

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
- 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
- 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

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
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	Not Present
- RB stop/continue	Not Present
Downlink HS-PDSCH Information	
- HS-SCCH Info	Not present
- Measurement Feedback Info	Not present
- CHOICE mode	FDD (no data)

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.

...

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.

...

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 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;

~~1> 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";~~

- 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".

~~1> if the IE "HS_DSCH Timeslot Configuration" is included:~~

~~2> store the received configuration.~~

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.

Reference

3GPP TS 25.331 clauses 8.2.2.~~3~~, 8.6.6.32

8.2.4.35 ~~Transport Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change with MAC-hs reset)~~Void

~~8.2.4.35.1~~ Definition and applicability

All UEs which support FDD and HS-PDSCH.

~~8.2.4.35.2~~ Conformance requirement

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 "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 [TS-25.321].

∴

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

2> if the IE "Serving HS-DSCH radio link indicator" is set to "TRUE":

3> consider this radio link as the serving HS-DSCH radio link;

∴

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> 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":
 - 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".
- 1> if the IE "HS-DSCH Timeslot Configuration" is included:
 - 2> store the received configuration.

Reference

3GPP TS 25.331 clauses 8.6.3.1, 8.6.5.6, 8.6.6.4, 8.6.6.32

8.2.4.35.3 — Test purpose

To confirm that the UE changes the serving HS-DSCH cell according to the received TRANSPORT CHANNEL RECONFIGURATION message, in case of MAC-hs reset.

8.2.4.35.4 — Method of test

Initial Condition

System Simulator: 2 cells — Cell 1 and 2 are active

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

Table 8.2.4.35

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA-RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-70	-70	-60

Table 8.2.4.35 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL-DCH state and has a radio bearer mapped on HS-DSCH established in cell 1.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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 cell 1 shall be kept as the serving HS-DSCH cell. The UE shall transmit an ACTIVE-SET-UPDATE-COMPLETE message to the SS on the uplink DCCH using AM-RLC.

The SS sends a MEASUREMENT-CONTROL message to the UE configuring event 1D "Change of best cell".

SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.35. UE shall transmit a MEASUREMENT-REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1d.

The SS transmits a TRANSPORT-CHANNEL-RECONFIGURATION message to the UE. At the activation time the UE changes the serving HS-DSCH radio link to cell 2. 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		←	ACTIVE-SET-UPDATE	The SS instructs the UE to add cell 2 in the active set.
2		→	ACTIVE-SET-UPDATE-COMPLETE	The UE adds the radio-link in cell 2.
3		←	MEASUREMENT-CONTROL	Configure event 1D "Change of best cell"
4		SS		SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.35
5		→	MEASUREMENT-REPORT	See specific message contents for this message
6		←	TRANSPORT-CHANNEL-RECONFIGURATION	
7		SS		At the activation time, the SS changes the serving HS-DSCH radio link to cell 2 and performs a MAC-hs reset.
8		→	TRANSPORT-CHANNEL-RECONFIGURATION-COMPLETE	
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

ACTIVE SET UPDATE (Step 1)

Information Element	Value/remark
Radio link addition information	
— Primary CPICH Info	Primary scrambling code of Cell 2
— Primary scrambling code	
— Downlink DPCH info for each RL	FDD
— CHOICE mode	P-CPICH may be used.
— Primary CPICH usage for channel estimation	Calculated value from Cell synchronisation information
— DPCH frame offset	Not present
— Secondary CPICH info	This IE is repeated for all existing downlink DPCHs allocated to the UE
— DL channelisation code	Not present
— Secondary scrambling code	Not present
— Spreading factor	Refer to the parameter set in TS 34.108
— 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	1
— SSDT cell identity	Not present
— Close loop timing adjustment mode	Not present
— TFCI combining indicator	TRUE
— SCCPCH information for FACH	Not present

MEASUREMENT CONTROL (Step 3)

Information Element	Value/remark
Measurement identity	1
Measurement command	Setup
— CHOICE measurement type	Intra-frequency measurement
— Intra-frequency measurement objects list	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	Intra-frequency measurement reporting criteria
— Parameters required for each event	
— Intra-frequency event identity	1D
— Triggering condition 2	Active set cells
— Hysteresis	4
— Time to trigger	20 mSec
— Reporting cell status	Not present
— Measurement reporting mode	
— Measurement reporting transfer mode	Acknowledged mode RLC
— Periodic reporting / Event trigger reporting mode	Event trigger
— Additional measurement list	Not present
— DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 5)

Information Element	Value/remark
Measurement identity	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	Check to see if set to "Intra-frequency event results"
— Event ID	Check to see if set to "1D"
— Cell measurement event results	
— Primary scrambling code	Check to see if set to "Primary scrambling code of Cell 2"

~~TRANSPORT CHANNEL 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'
Added or Reconfigured TrCH information list	(for HS-DSCH)
- Added or Reconfigured DL TrCH information	HS-DSCH
- Downlink transport channel type	Not present
- DL Transport channel identity	HS-DSCH
- CHOICE DL parameters	Not present
- HARQ Info	TRUE
- MAC-hs reset indicator	Not present
- Added or reconfigured MAC-d flow	-2.0
- DCH quality target	
- BLER Quality value	
Downlink HS-PDSCH Information	
- HS-SCCH Info	FDD
- CHOICE mode	
- DL Scrambling Code	2
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	FDD
- Measurement Feedback Info	6-dB
- CHOICE mode	4 ms
- P0hsdch	1
- CQI Feedback cycle, k	-3 dB
- CQI repetition factor	FDD (no data)
- Acc1	
- CHOICE mode	
Downlink information for each radio link list	(for cell-1)
- Downlink information for each radio link	FDD
- Choice mode	Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- Primary CPICH info	Not Present
- Primary scrambling code	Not Present
- PDSCH with SHO-DCH info	FALSE
- PDSCH code mapping	Not present
- Serving HS-DSCH radio link indicator	Primary CPICH may be used
- Downlink DPCH info for each RL	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
- Primary CPICH usage for channel estimation	Not Present
- DPCH frame offset	
- Secondary CPICH info	4
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set 0
- Secondary scrambling code	No change
- Spreading factor	0
- Code number	Not Present
- Scrambling code change	Not Present
- TPC combination index	Not Present
- SS DT Cell Identity	(for cell-2)
- Closed loop timing adjustment mode	FDD
- SCCPCH information for FACH	
- Downlink information for each radio link	FDD
- Choice mode	Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- Primary CPICH info	Not Present
- Primary scrambling code	Not Present
- PDSCH with SHO-DCH info	Not Present
- PDSCH code mapping	TRUE
- Serving HS-DSCH radio link indicator	Not present
- Downlink DPCH info for each RL	Primary CPICH may be used
- Primary CPICH usage for channel estimation	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
- DPCH frame offset	Not Present
- Secondary CPICH info	4
- DL channelisation code	Reference to TS34.108 clause 6.10 Parameter Set 0
- Secondary scrambling code	No change
- Spreading factor	0
- Code number	Not Present
- Scrambling code change	Not Present
- TPC combination index	Not Present
- SS DT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

--	--

~~8.2.4.35.5~~ ~~Test requirements~~

~~After step 4, the UE shall transmit a MEASUREMENT REPORT message.~~

~~After step 7, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.~~

8.2.6.39.5 Test requirement

After step 3, 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' = MSB₂₀ (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 PHYSICAL CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL SRB3.

(In the case where ciphering is supported)After step 9, UE shall start new ciphering configuration on the RAB.

8.2.6.39a Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change without MAC-hs reset)

8.2.6.39a.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.6.39a.2 Conformance requirement

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 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 information for each radio link" is included in a received message, the UE shall:

- 2> if the IE "Serving HS-DSCH radio link indicator" is set to "TRUE":
 - 3> consider this radio link as the serving HS-DSCH radio link;

...

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> 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":

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".

Reference

3GPP TS 25.331 clause 8.2.2, 8.6.3.1, 8.6.6.4, 8.6.6.32

8.2.6.39a.3 Test purpose

To confirm that the UE changes the serving HS-DSCH cell according to the received PHYSICAL CHANNEL RECONFIGURATION message in case of no MAC-hs reset.

8.2.6.39a.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active

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

Table 8.2.6.39a

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>		<u>Cell 2</u>	
		<u>T0</u>	<u>T1</u>	<u>T0</u>	<u>T1</u>
<u>UTRA_RF Channel Number</u>		<u>Ch. 1</u>		<u>Ch. 1</u>	
<u>CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-60</u>	<u>-70</u>	<u>-70</u>	<u>-60</u>

Table 8.2.6.39a illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1.

The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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 cell 1 shall be kept as the serving HS-DSCH cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS sends a MEASUREMENT CONTROL message to the UE configuring event 1D "Change of best cell"..

SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.39a. UE shall transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity" set to 1d.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE . At the activation time the UE changes the serving HS-DSCH radio link to cell 2. Finally the UE transmits 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>ACTIVE SET UPDATE</u>	<u>The SS instructs the UE to add cell 2 in the active set.</u>
<u>2</u>		<u>→</u>	<u>ACTIVE SET UPDATE COMPLETE</u>	<u>The UE adds the radio link in cell 2.</u>
<u>3</u>		<u>←</u>	<u>MEASUREMENT CONTROL</u>	<u>Configure event 1D "Change of best cell"</u>
<u>4</u>		<u>SS</u>		<u>SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.35</u>
<u>5</u>		<u>→</u>	<u>MEASUREMENT REPORT</u>	<u>See specific message contents for this message</u>
<u>6</u>		<u>←</u>	<u>PHYSICAL CHANNEL RECONFIGURATION</u>	
<u>7</u>		<u>SS</u>		<u>At the activation time, the SS changes the serving HS-DSCH radio link to cell 2.</u>
<u>8</u>		<u>→</u>	<u>PHYSICAL CHANNEL RECONFIGURATION COMPLETE</u>	<u>UE changes the serving HS-DSCH radio link to cell 2</u>
<u>9</u>		<u>↔</u>	<u>CALL C.3</u>	<u>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</u>

Specific Message Contents

ACTIVE SET UPDATE (Step 1)

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u> - <u>Primary CPICH Info</u> - <u>Primary scrambling code</u> - <u>Downlink DPCH info for each RL</u> - <u>CHOICE mode</u> - <u>Primary CPICH usage for channel estimation</u> - <u>DPCH frame offset</u> - <u>Secondary CPICH info</u> - <u>DL channelisation code</u> - <u>Secondary scrambling code</u> - <u>Spreading factor</u> - <u>Code number</u> - <u>Scrambling code change</u> - <u>TPC combination index</u> - <u>SSDT cell identity</u> - <u>Close loop timing adjustment mode</u> - <u>TFCI combining indicator</u> - <u>SCCPCH information for FACH</u>	<u>Primary scrambling code of Cell 2</u> <u>FDD</u> <u>P-CPICH may be used.</u> <u>Calculated value from Cell synchronisation information</u> <u>Not present</u> <u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u> <u>Not present</u> <u>Refer to the parameter set in TS 34.108</u> <u>For each DPCH, assign the same code number in the current code given in cell 1.</u> <u>Not present</u> <u>0</u> <u>Not present</u> <u>Not present</u> <u>TRUE</u> <u>Not present</u>

MEASUREMENT CONTROL (Step 3)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u> <u>Measurement command</u> - <u>CHOICE measurement type</u> - <u>Intra-frequency measurement objects list</u> - <u>Intra-frequency measurement quantity</u> - <u>Intra-frequency reporting quantity</u> - <u>Reporting cell status</u> - <u>Measurement validity</u> - <u>CHOICE report criteria</u> - <u>Parameters required for each event</u> - <u>Intra-frequency event identity</u> - <u>Triggering condition 2</u> - <u>Hysteresis</u> - <u>Time to trigger</u> - <u>Reporting cell status</u> <u>Measurement reporting mode</u> - <u>Measurement reporting transfer mode</u> - <u>Periodic reporting / Event trigger reporting mode</u> <u>Additional measurement list</u> <u>DPCH compressed mode status info</u>	<u>1</u> <u>Setup</u> <u>Intra-frequency measurement</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Intra-frequency measurement reporting criteria</u> <u>1D</u> <u>Active set cells</u> <u>4</u> <u>20 mSec</u> <u>Not present</u> <u>Acknowledged mode RLC</u> <u>Event trigger</u> <u>Not present</u> <u>Not present</u>

MEASUREMENT REPORT (Step 5)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u> <u>Measured results</u> <u>Measured results on RACH</u> <u>Additional Measured results</u> <u>Event results</u> - <u>Event ID</u> - <u>Cell measurement event results</u> - <u>Primary scrambling code</u>	<u>1</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if set to "Intra-frequency event results"</u> <u>Check to see if set to "1D"</u> <u>Check to see if set to "Primary scrambling code of Cell 2"</u>

PHYSICAL CHANNEL 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:

<u>Information Element</u>	<u>Value/remark</u>
New H-RNTI	'0101 0101 0101 0101'
<u>Downlink HS-PDSCH Information</u>	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	2
- Measurement Feedback Info	
- CHOICE mode	FDD
- POhsdsch	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ_{CQI}	5 (corresponds to 0dB in relative power offset)
- CHOICE mode	FDD (no data)
<u>Downlink information common for all radio links</u>	
- MAC-hs reset indicator	Not Present
<u>Downlink information for each radio link list</u>	
- Downlink information for each radio link	(for cell 2)
- 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	Not present
- 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	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	1
- Scrambling code change	No change
- TPC combination index	0
- SSTD Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

8.2.6.39a.5 Test requirements

After step 4, the UE shall transmit a MEASUREMENT REPORT message.

After step 7, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8.2.6.39b Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (serving HS-DSCH cell change with MAC-hs reset)

8.2.6.39b.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.6.39b.2 Conformance requirement

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 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 information for each radio link" is included in a received message, the UE shall:

- 2> if the IE "Serving HS-DSCH radio link indicator" is set to "TRUE":
 - 3> consider this radio link as the serving HS-DSCH radio link;

...

If the IE "Downlink information common for all radio links " is included the UE shall:

- 1> if the IE "MAC-hs reset indicator" is included:
 - 2> reset the MAC-hs entity [TS 25.321].

...

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 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".

Reference

3GPP TS 25.331 clauses 8.2.2, 8.6.3.1, 8.6.6.4, 8.6.6.27, 8.6.6.32

8.2.6.39b.3 Test purpose

To confirm that the UE changes the serving HS-DSCH cell according to the received PHYSICAL CHANNEL RECONFIGURATION message, in case of MAC-hs reset.

8.2.6.39b.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

Table 8.2.6.39b

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>			<u>Cell 2</u>		
		<u>T0</u>	<u>T1</u>	<u>T2</u>	<u>T0</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel Number</u>		<u>Ch. 1</u>			<u>Ch. 1</u>		
<u>CPICH Ec</u>	<u>dBm/3.84MHz</u>	<u>-60</u>	<u>-60</u>	<u>-70</u>	<u>-70</u>	<u>-60</u>	<u>-60</u>

Table 8.2.6.39b illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.39b. UE shall be triggered to transmit 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. The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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 cell 1 shall be kept as the serving HS-DSCH cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. At the activation time the UE changes the HS-PDSCH configuration. Finally the UE transmits 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				SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.39b.
2		→	MEASUREMENT REPORT	See specific message contents for this message
3		←	ACTIVE SET UPDATE	The SS instructs the UE to add cell 2 in the active set.
4		→	ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
5		←	MEASUREMENT CONTROL	Configure event 1D "Change of best cell"
6		SS		SS configures its downlink transmission power settings according to columns "T2" in table 8.2.6.39b
7		→	MEASUREMENT REPORT	See specific message contents for this message
8		←	PHYSICAL CHANNEL RECONFIGURATION	
9		SS		At the activation time, the SS changes the serving HS-DSCH radio link to cell 2 and performs a MAC-hs reset.
10		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
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 Contents

MEASUREMENT REPORT (Step 2)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> - <u>Message authentication code</u> - <u>RRC Message sequence number</u>	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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
<u>Measurement identity</u> <u>Measured Results</u> - <u>Intra-frequency measured results</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u>	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important) Checked that this IE is absent Checked that this IE is absent Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is present and includes IE COUNT-C-SFN frame difference Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108 Checked that this IE is absent Checked that this IE is present Checked that this IE is absent Checked that this IE is absent Checked that this IE is absent
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - <u>Intra-frequency measurement event results</u> - <u>Intra-frequency event identity</u> - <u>Cell measurement event results</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u>	1a Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u> - <u>Primary CPICH Info</u> - <u>Primary scrambling code</u> - <u>Downlink DPCH info for each RL</u> - <u>CHOICE mode</u> - <u>Primary CPICH usage for channel estimation</u> - <u>DPCH frame offset</u> - <u>Secondary CPICH info</u> - <u>DL channelisation code</u> - <u>Secondary scrambling code</u> - <u>Spreading factor</u> - <u>Code number</u> - <u>Scrambling code change</u> - <u>TPC combination index</u> - <u>SSDT cell identity</u> - <u>Close loop timing adjustment mode</u> - <u>TFCI combining indicator</u> - <u>SCCPCH information for FACH</u>	<u>Primary scrambling code of Cell 2</u> <u>FDD</u> <u>P-CPICH may be used.</u> <u>Calculated value from Cell synchronisation information</u> <u>Not present</u> <u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u> <u>Not present</u> <u>Refer to the parameter set in TS 34.108</u> <u>For each DPCH, assign the same code number in the current code given in cell 1.</u> <u>Not present</u> <u>1</u> <u>Not present</u> <u>Not present</u> <u>TRUE</u> <u>Not present</u>

MEASUREMENT CONTROL (Step 5)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u> <u>Measurement command</u> - <u>CHOICE measurement type</u> - <u>Intra-frequency measurement objects list</u> - <u>Intra-frequency measurement quantity</u> - <u>Intra-frequency reporting quantity</u> - <u>Reporting cell status</u> - <u>Measurement validity</u> - <u>CHOICE report criteria</u> - <u>Parameters required for each event</u> - <u>Intra-frequency event identity</u> - <u>Triggering condition 2</u> - <u>Hysteresis</u> - <u>Time to trigger</u> - <u>Reporting cell status</u> <u>Measurement reporting mode</u> - <u>Measurement reporting transfer mode</u> - <u>Periodic reporting / Event trigger reporting mode</u> <u>Additional measurement list</u> <u>DPCH compressed mode status info</u>	<u>1</u> <u>Setup</u> <u>Intra-frequency measurement</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Not present</u> <u>Intra-frequency measurement reporting criteria</u> <u>1D</u> <u>Active set cells</u> <u>4</u> <u>20 mSec</u> <u>Not present</u> <u>Acknowledged mode RLC</u> <u>Event trigger</u> <u>Not present</u> <u>Not present</u>

MEASUREMENT REPORT (Step 7)

<u>Information Element</u>	<u>Value/remark</u>
<u>Measurement identity</u> <u>Measured results</u> <u>Measured results on RACH</u> <u>Additional Measured results</u> <u>Event results</u> - <u>Event ID</u> - <u>Cell measurement event results</u> - <u>Primary scrambling code</u>	<u>1</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if set to "Intra-frequency event results"</u> <u>Check to see if set to "1D"</u> <u>Check to see if set to "Primary scrambling code of Cell 2"</u>

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same message as specified for "Packet to CELL_DCH from CELL_DCH in PS" in 34.108 except for the following:

<u>Information Element</u>	<u>Value/remark</u>
<u>New H-RNTI</u>	'0101 0101 0101 0101'
<u>Downlink HS-PDSCH Information</u>	
- <u>HS-SCCH Info</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>DL Scrambling Code</u>	
- <u>HS-SCCH Channelisation Code Information</u>	
- <u>HS-SCCH Channelisation Code</u>	<u>2</u>
- <u>Measurement Feedback Info</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>POhdsch</u>	<u>6 dB</u>
- <u>CQI Feedback cycle, k</u>	<u>4 ms</u>
- <u>CQI repetition factor</u>	<u>1</u>
- <u>Δ_{CQI}</u>	<u>5 (corresponds to 0dB in relative power offset)</u>
- <u>CHOICE mode</u>	<u>FDD (no data)</u>
<u>Downlink information common for all radio links</u>	
- <u>MAC-hs reset indicator</u>	<u>TRUE</u>
<u>Downlink information for each radio link list</u>	
- <u>Downlink information for each radio link</u>	<u>(for cell 2)</u>
- <u>Choice mode</u>	<u>FDD</u>
- <u>Primary CPICH info</u>	
- <u>Primary scrambling code</u>	<u>Ref. to the Default setting in TS34.108 clause 6.1 (FDD)</u>
- <u>PDSCH with SHO DCH info</u>	<u>Not Present</u>
- <u>PDSCH code mapping</u>	<u>Not Present</u>
- <u>Serving HS-DSCH radio link indicator</u>	<u>TRUE</u>
- <u>Downlink DPCH info for each RL</u>	<u>Not present</u>
- <u>Primary CPICH usage for channel estimation</u>	<u>Primary CPICH may be used</u>
- <u>DPCH frame offset</u>	<u>Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400</u>
- <u>Secondary CPICH info</u>	<u>Not Present</u>
- <u>DL channelisation code</u>	
- <u>Secondary scrambling code</u>	<u>Not Present</u>
- <u>Spreading factor</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>Code number</u>	<u>1</u>
- <u>Scrambling code change</u>	<u>No change</u>
- <u>TPC combination index</u>	<u>0</u>
- <u>SSDT Cell Identity</u>	<u>Not Present</u>
- <u>Closed loop timing adjustment mode</u>	<u>Not Present</u>
- <u>SCCPCH information for FACH</u>	<u>Not Present</u>

8.2.6.39b.5 Test requirements

After step 1, the UE shall transmit a MEASUREMENT REPORT message.

After step 6, the UE shall transmit a MEASUREMENT REPORT message.

After step 9, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8.2.7 Physical Shared Channel Allocation [TDD only]

3GPP TSG T1 Meeting #23
Beijing, China, 10th – 14th May 2004

T1-040973

CR-Form-v7

CHANGE REQUEST

TS 34.123-1 CR 780 rev Current version: 5.7.1

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 SRNS relocation PDCP test cases (Revision of T1-040939)		
Source:	Panasonic		
Work item code:	TEI	Date:	14/5/04
Category:	F	Release:	Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: The UE must support ciphering. However it is optional in the case of network to apply ciphering. Hence the test cases in this CR have to be revised to allow both network applies ciphering and network does not apply ciphering cases to be tested.

New corrections in T1-040939 (highlight in turquoise)

Test cases 7.3.3.5 to 7.3.3.11 use DOWNLINK DIRECT TRANSFER message embedding the NAS message IDENTITY REQUEST and relies on that UE while in test loop mode will respond with UPLINK DIRECT TRANSFER message embedded with NAS response IDENTITY RESPONSE. However, it can not be expected that the UE will respond correctly to NAS messages while the test loop is used. This CR therefore proposes to omit verification of new integrity configuration on SRB3 because similar verification can be found in other test cases like e.g. 8.3.3.3.

New corrections in T1-040973 (highlight in green)

The added IXIT are not appropriate and unnecessary.

TC 7.3.3.8 is not applicable for UE that support only CS service.

Summary of change: TC 7.3.3.5

1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message.
2. New IXIT statement added.
3. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA0 if SS applies ciphering.
4. In step 3 of the expected sequence, it is clarified that the SS will send the UTRAN MOBILITY INFORMATION message after the last ciphering

activation time has elapsed, in the case ciphering is applied by SS.

5. In step 4, 5, 8 and 9, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages.
6. Contents for IE "Ciphering mode info" are added to specific message content of UTRAN MOBILITY INFORMATION message in step 3 to request for a change in ciphering algorithm during SRNS relocation.
7. Step 8 and 9 are voided and test requirement is revised.

TC 7.3.3.6

1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message.
2. New IXIT statement added.
3. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA1 if SS applies ciphering.
4. In step 5, 6, 9 and 10, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages.
5. Contents for IE "Ciphering mode info" are added to specific message content of CELL UPDATE CONFIRM message in step 4 to request for a change in ciphering algorithm during SRNS relocation.
6. Step 9 and 10 are voided and test requirement is revised.

TC 7.3.3.7

1. New IXIT statement added.
2. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA1 if SS applies ciphering.
3. In step 5, 6, 9, 10 and 17 of the expected sequence, the UE shall not change its ciphering algorithm.
4. Step 9 and 10 are voided and test requirement is revised.

TC 7.3.3.8

1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message.
2. New IXIT statement added.
3. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA0 if SS applies ciphering.
4. In step 3 of the expected sequence, it is clarified that the SS will send the RADIO BEARER SETUP message after the last ciphering activation time has elapsed, in the case ciphering is applied by SS.
5. In step 4, 5, 8, 9 and 16, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages.
6. Contents for IE "Ciphering mode info" are added to specific message content of RADIO BEARER SETUP message in step 3 to request for a change in ciphering algorithm during SRNS relocation.
7. Step 8 and 9 are voided and test requirement is revised.
8. Initial condition to be revised to exclude state 6-9.

TC 7.3.3.9

1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message.
2. New IXIT statement added.
3. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA1 if SS applies ciphering.
4. In step 3 of the expected sequence, it is clarified that the SS will send the RADIO BEARER RECONFIGURATION message after the last ciphering activation time has elapsed, in the case ciphering is applied by SS.
5. In step 4, 5, 8, 9 and 16, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages.
6. Contents for IE "Ciphering mode info" are added to specific message

content of RADIO BEARER RECONFIGURATION message in step 3 to request for a change in ciphering algorithm during SRNS relocation.
 7. Step 8 and 9 are voided and test requirement is revised.

TC 7.3.3.10
 1. New IXIT statement added.
 2. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA1 if SS applies ciphering.
 3. In step 4, 5, 8, 9 and 16 of the expected sequence, the UE shall not change its ciphering algorithm.
 4. Step 8 and 9 are voided and test requirement is revised.

TC 7.3.3.11
 1. New IXIT statement added.
 2. Message content of the SECURITY MODE COMMAND message used in the initial condition is given to start with UEA1 if SS applies ciphering.
 3. In step 4, 5, 8, 9 and 16 of the expected sequence, the UE shall not change its ciphering algorithm.
 4. Step 8 and 9 are voided and test requirement is revised.

Consequences if not approved: ☞ Conformance UE will fail this test case.

Clauses affected: ☞ 7.3.3.5, 7.3.3.6, 7.3.3.7, 7.3.3.8, 7.3.3.9, 7.3.3.10, 7.3.3.11

Other specs affected:	☞	<table border="1"><tr><th>Y</th><th>N</th></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X		X		X	Other core specifications	☞
		Y	N									
			X									
	X											
	X											
	Test specifications											
	O&M Specifications											

Other comments: ☞ Affects R'99, 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.

7.3.3.5 UTRAN MOBILITY INFORMATION: Lossless SRNS relocation in CELL_FACH (without pending of ciphering)

7.3.3.5.1 Definition

7.3.3.5.2 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 variable PDCP_SN_INFO is non-empty:
 - 2> include the IE "RB with PDCP information list" in the UTRAN MOBILITY INFORMATION CONFIRM message and set it to the value of the variable PDCP_SN_INFO.
- 1> if the received UTRAN MOBILITY INFORMATION message included the IE "Downlink counter synchronisation info":
 - 2> re-establish 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 "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> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the UTRAN MOBILITY INFORMATION CONFIRM message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> clear the variable PDCP_SN_INFO.

Reference

3GPP TS 25.331 clause 8.3.3

7.3.3.5.3 Test purpose

1. To confirm that the UE that support lossless SRNS relocation, sends the correct expected downlink PDCP sequence number to SS after a successful SRNS relocation.
2. To confirm that the UE sends calculated START values for each CN domain to SS after a successful SRNS relocation.
3. In the case that ciphering is applied by the network, to confirm that the UE applies the new ciphering algorithm following a successful SRNS relocation.

7.3.3.5.4 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.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Contents

If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA0</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

The contents of RADIO BEARER SETUP message to be transmitted during P14 as specified in TS 34.108 clause 7.4, use the message titled "Packet to CELL_FACH from CELL_FACH in PS" as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
- PDCP info	
- Support for lossless SRNS relocation	TRUE
- Max PDCP SN window size	sn65535
- PDCP PDU header	present

Test Procedure

The UE is in the CELL_FACH state. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDU on the RAB. If ciphering is supported, a PDCP PDU has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS then transmits a UTRAN MOBILITY INFORMATION message, which includes a valid IE "New C-RNTI" and "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' = MSB₂₀ (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, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

~~<Ciphering is supported.>~~

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				

			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU.
3	←	UTRAN MOBILITY INFORMATION	This 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" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1.

4	→	UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included, IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2. <u>If IE "Ciphering mode info" is present in step 3, new</u> 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.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. <u>If IE "Ciphering mode info" is present in step 3, new</u> New ciphering configuration is applied on DL SRB2 with the same <u>START</u> value as used in step 4.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER <u>Void</u>	NAS message embedded in this 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 4.
9	→	<u>Void</u> UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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 4.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.

12			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU.
3		←	UTRAN MOBILITY INFORMATION	New U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" includes the next PDCP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1.
4		→	UTRAN MOBILITY INFORMATION	New calculated START value is

		CONFIRM	included. IE "Receive_PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	IDENTITY REQUEST	New integrity protection configuration is applied on DL SRB3.
9	→	IDENTITY RESPONSE	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop-Back (RB-LB) entity.
12			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data.
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

UTRAN MOBILITY INFORMATION ~~for PS-only UE~~ (Step 3)

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	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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
- RB identity	20
- RLC sequence number	Current RLC SN+2
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
New U-RNTI	
- SRNC Identity	An arbitrary 12-bits string which is different from original SRNC
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	Not Present
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 specific DRX cycle length coefficient	7
- CN domain identity	CS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	1E 01H
- CN domain specific DRX cycle length coefficient	7
Downlink counter synchronisation info	
- RB with PDCP information list	This IE is included
- RB with PDCP information	
- RB identity	20
- PDCP SN info	The next PCDP sequence number that SS is expected to receive from the UE

UTRAN MOBILITY INFORMATION ~~for CS-only UE~~ (Step 3)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	Not present
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
New U-RNTI	
SRNC Identity	An arbitrary 12-bits string which is different from original SRNC
S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	Not Present
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 specific DRX cycle length coefficient	7
CN domain identity	CS
CN domain specific NAS system information	
GSM-MAP NAS system information	4E 01H
CN domain specific DRX cycle length coefficient	7
Downlink counter synchronisation info	
RB with PDCP information list	Not Present

UTRAN MOBILITY INFORMATION CONFIRM for PS only UE (Step 4)

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	This IE is checked
- RB with PDCP information	
- RB identity	20
- PDCP SN info	Check that the PCDP sequence number is the next sequence number that SS would transmit to the UE. (X)
- START list	Check that this IE is correct value

~~UTRAN MOBILITY INFORMATION CONFIRM for CS only UE (Step 4)~~

~~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	Check that this IE is not present.
- START list	Check that this IE is correct value.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

7.3.3.5.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 3, 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 " $START_X' = MSB_{20}(\text{MAX}\{\text{COUNT-C}, \text{COUNT-I}\} | \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X) + 2$ ", 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. This message shall also include IE "Receive PDCP sequence number" for RB#20. .

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS and apply new ciphering configuration on UL SRB3.

After step 8, the UE shall respond with a IDENTITY RESPONSE message to SS

After step 9, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the UTRAN MOBILITY INFORMATION CONFIRM message.

7.3.3.6 Cell Update: Lossless SRNS relocation in CELL_FACH (without pending of ciphering)**7.3.3.6.1 Definition****7.3.3.6.2 Conformance requirement**

When the UTRAN receives a CELL UPDATE message, the UTRAN should:

- 1> in case the procedure was triggered by reception of a CELL UPDATE:
 - 2> if SRNS relocation was performed:
 - 3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH.
 - 2> otherwise:
 - 3> update the START value for each CN domain as maintained in UTRAN (refer to TS 25.331 subclause 8.5.9) with "START" in the IE "START list" for the CN domain as indicated by "CN domain identity" in the IE "START list";
 - 3> if this procedure was triggered while the UE was not in CELL_DCH state, then for each CN domain as indicated by "CN domain identity" in the IE "START list":
 - 4> set the 20 MSB of the MAC-d HFN with the corresponding START value in the IE "START list";

- 4> set the remaining LSB of the MAC-d HFN to zero.
- 3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH or optionally on the CCCH but only if ciphering is not required; and
- 3> optionally include the IE "RLC re-establish indicator (RB5 and upwards)" to request a RLC re-establishment in the UE, in which case the corresponding RLC entities should also be re-established in UTRAN; or

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> if the variable PDCP_SN_INFO is non-empty:
 - 2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.
- 1> if the received CELL UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of the 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 any response message transmitted below.
- 1> transmit a response message as specified in TS 25.331 subclause 8.3.1.7;

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 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 IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM 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 as specified in [36].
- 1> if the variable PDCP_SN_INFO non-empty:
- 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> continue with the remainder of the procedure.

Reference

3GPP TS 25.331 clause 8.3.1

7.3.3.6.3 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 that support lossless SRNS relocation, sends the correct expected downlink PDCP sequence number to SS after a successful SRNS relocation.
3. To confirm that the UE sends calculated START values for each CN domain to SS after a successful SRNS relocation.
4. [In the case that ciphering is applied by the network, to confirm that the UE applies the new ciphering algorithm following a successful SRNS relocation.](#)

7.3.3.6.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

[If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in \[9\] TS 34.108 clause 9, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P14 as specified in TS 34.108 clause 7.4, uses the message titled "Packet to CELL_FACH from CELL_FACH in PS" as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
- PDCP info - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header	TRUE sn65535 present

Test Procedure

Table 7.3.3.6

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 7.3.3.6 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_FACH state in cell 1. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDU on the RAB. If ciphering is supported, the number of a PDCP PDU has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.6. 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". SS then transmits a CELL UPDATE CONFIRM message, which includes a valid IE "New C-RNTI" and "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 " $START_X' = MSB_{20}(\text{MAX}\{\text{COUNT-C}, \text{COUNT-I}\} | \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X) + 2$ ", 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 CELL UPDATE CONFIRM message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

<Ciphering is supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. After last ciphering activation time has elapsed and there is no pending ciphering activation time, SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.6. 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". New C-RNTI and U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
5	→	UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2. If IE "Ciphering mode info" is present in step 4, new 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 integrity protection configuration is applied on DL SRB2. If IE "Ciphering mode info" is present in step 4, new New ciphering configuration is applied on DL SRB2 with the same value as used in step 5.
7	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
8	←	UE CAPABILITY INFORMATION CONFIRM	
9	←	DOWNLINK DIRECT TRANSFER Void	NAS message embedded in this 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	→	Void UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
11	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet

12			<p>After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet.</p> <p>The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.</p>
13			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
14	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
15			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
16			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
17			New ciphering configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 5.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data.
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.6. 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". New C-RNTI and U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
5	→	UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. IE "Receive PCDP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
6	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
7	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
8	←	UE CAPABILITY INFORMATION CONFIRM	
9	←	IDENTITY REQUEST	New integrity protection configuration is applied on DL SRB3.
10	→	IDENTITY RESPONSE	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
11	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
12			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
13			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

14	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
15			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
16			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

CELL UPDATE (Step 3)

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
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM ~~for PS only UE~~ (Step 4)

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	UEA0
- 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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
- RB identity	20
- RLC sequence number	Current RLC SN+2
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
New U-RNTI	
- SRNC Identity	An arbitrary 12-bits string which is different from original SRNC
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	Not Present
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
Downlink counter synchronisation info	
- RB with PDCP information list	This IE is included
- RB with PDCP information	
- RB identity	20
- PDCP SN info	The next PCDP sequence number that SS is expected to receive from the UE.(X)

CELL UPDATE CONFIRM for CS only UE (Step 4)

Use the same message sub type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	Not present
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 identity CN domain specific NAS system information GSM-MAP NAS system information 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 CS 1E 01H Not Present

UTRAN MOBILITY INFORMATION CONFIRM ~~for PS only UE~~ (Step 5)

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 - RB with PDCP information - RB identity - PDCP SN info - START list	This IE is checked 20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE Check that this IE is correct value

~~UTRAN MOBILITY INFORMATION CONFIRM for CS only UE (Step 5)~~

~~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.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

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.

7.3.3.6.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 2, UE shall transmit CELL UPDATE message with the value of IE "Cell update cause" set to "cell reselection".

After step 4, 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' = MSB₂₀ (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, this message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 6, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

~~After step 9, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL-SRB3.~~

After step 10, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the UTRAN MOBILITY INFORMATION CONFIRM message.

7.3.3.7 URA Update: Lossless SRNS relocation in CELL_FACH (without pending of ciphering)

7.3.3.7.1 Definition

7.3.3.7.2 Conformance requirement

When the UTRAN receives a URA UPDATE message, the UTRAN should:

- 1> in case the procedure was triggered by reception of a URA UPDATE:
 - 2> if SRNS relocation was performed:
 - 3> transmit a URA UPDATE CONFIRM message on the downlink DCCH.

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> if the variable PDCP_SN_INFO is non-empty:

- 2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.
- 1> if the received URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - 2> re-establish RB2;
 - 2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of the 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 any response message transmitted below.

If the URA UPDATE CONFIRM message:

- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes any one or both of the IEs "New C-RNTI" and "New U-RNTI":

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

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 IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM 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> if the variable PDCP_SN_INFO non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".

Reference

3GPP TS 25.331 clause 8.3.1

7.3.3.7.3 Test purpose

1. To confirm that the UE executes a URA update procedure after the successful reselection of another UTRA cell.
2. To confirm that the UE that support lossless SRNS relocation, sends the correct expected downlink PDCP sequence number to SS after a successful SRNS relocation.
3. To confirm that the UE sends calculated START values for each CN domain to SS after a successful SRNS relocation.

7.3.3.7.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 3 are active.

UE: URA_PCH (state 6-13) in cell 1 as specified in clause 7.4 of TS 34.108.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P14 as specified in TS 34.108 clause 7.4, uses the message titled "Packet to CELL_FACH from CELL_FACH in PS" as found in TS 34.108 clause 9, with the following exception.

<u>Information Element</u>	<u>Value/remark</u>
- PDCP info	
- Support for lossless SRNS relocation	TRUE
- Max PDCP SN window size	sn65535
- PDCP PDU header	present

Test Procedure

Table 7.3.3.7

Parameter	Unit	Cell 1		Cell 3	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-75	-75	-60

Table 7.3.3.7 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 URA_PCH state, camping onto cell 1. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDUs on the RAB. If ciphering is supported, a PDCP PDUs has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.7. The UE shall find cell 3 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a URA UPDATE message to the SS on the uplink CCCH of cell 3 and set IE "URA update cause" to "change of URA". After the SS receives this message, it transmits a URA UPDATE CONFIRM message, which includes a valid IE "New C-RNTI" and "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 " $START_X' = MSB_{20} (MAX \{COUNT-C, COUNT-I \mid \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X\}) + 2$ ", 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 CELL UPDATE CONFIRM message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

<Ciphering is supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. After last ciphering activation time has elapsed and there is no pending ciphering activation time, SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.7. 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 3.
3		→	URA UPDATE	Value "change of URA" shall be indicated in IE "URA update cause"

4	←	URA UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH". New C-RNTI and U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
5	→	UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. IE "Receive PDCP sequence number" shall be 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 integrity protection configuration is applied on DL SRB2. New ciphering configuration is applied on DL SRB2 with the same value as used in step 5.
7	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
8	←	UE CAPABILITY INFORMATION CONFIRM	
9	←	DOWNLINK DIRECT TRANSFER Void	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	→	Void UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
11	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet

12			<p>After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet.</p> <p>The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.</p>
13			<p>The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.</p>
14	→	PDCP Data	<p>The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet</p>
15			<p>After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data</p>
16			<p>The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).</p>
17		Void	<p>New ciphering configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 5.</p>
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data.
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.7. 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 3.
3		→	URA-UPDATE	Value "change of URA" shall be indicated in IE "URA update cause"

4	←	URA UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH". New C-RNTI and U-RNTI identities are assigned to the UE. IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
5	→	UTRAN MOBILITY INFORMATION CONFIRM	New calculated START value is included. IE "Receive PCDP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
6	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
7	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
8	←	UE CAPABILITY INFORMATION CONFIRM	
9	←	IDENTITY REQUEST	New integrity protection configuration is applied on DL SRB3.
10	→	IDENTITY RESPONSE	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
11	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
12			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
13			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

14	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
15			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
16			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

URA UPDATE (Step 3)

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
URA Update Cause	Check to see if set to "change of URA"

URA UPDATE CONFIRM ~~for PS-only UE~~ (Step 4)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	Not present
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC Identity <ul style="list-style-type: none"> - S-RNTI New C-RNTI	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
CN Information info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information - RB identity - PDCP SN info 	This IE is included 20 The next PCDP sequence number that SS is expected to receive from the UE.(X)

URA UPDATE CONFIRM for CS only UE (Step 4)

Use the same message sub-type found in TS 34.108, clause 9, with the following exceptions:

Information Element	Value/remark
Ciphering mode info	Not present
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC Identity <ul style="list-style-type: none"> - S-RNTI New C-RNTI	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
CN Information info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - RB with PDCP information list 	Not Present

UTRAN MOBILITY INFORMATION CONFIRM ~~for PS-only UE~~ (Step 5)

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 - RB with PDCP information - RB identity - PDCP SN info - START list	This IE is checked 20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE.(X) Check that this IE is correct value

~~UTRAN MOBILITY INFORMATION CONFIRM for CS-only UE (Step 5)~~

~~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.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

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.

7.3.3.7.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 2, UE shall transmit URA UPDATE message with the value of IE "URA update cause" set to "change of URA".

After step 4, 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' = MSB₂₀ (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. This message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 6, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 10, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the UTRAN MOBILITY INFORMATION CONFIRM message.

7.3.3.8 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Lossless SRNS relocation) (without pending of ciphering)

7.3.3.8.1 Definition

7.3.3.8.2 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".

2> else:

3> include the IE "Downlink counter synchronisation info".

The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info";

2> re-establish 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;

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 variable PDCP_SN_INFO is not empty:

2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_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 IE "Downlink counter synchronisation info" was included in the reconfiguration 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 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 [36].

- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> perform the actions below.

Reference

3GPP TS 25.331 clause 8.2.2.

7.3.3.8.3 Test purpose

- 1. To confirm that the UE performs a combined hard handover and SRNS relocation and then transmit a RADIO BEARER SETUP COMPLETE message in the new cell.
- 2. [In the case that ciphering is applied by the network, to confirm that the UE applies the new ciphering algorithm following a successful SRNS relocation.](#)

7.3.3.8.4 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.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

[If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in \[9\] TS 34.108 clause 9, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA0</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P13 as specified in TS 34.108 clause 7.4, use the message titled "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
RAB information for setup <ul style="list-style-type: none"> - RAB info - RAB identity - CN domain identity - NAS Synchronization Indicator - Re-establishment timer - RB information to setup - RB identity - PDCP info <ul style="list-style-type: none"> - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header - CHOICE RLC info type - CHOICE Uplink RLC mode - Transmission RLC discard <ul style="list-style-type: none"> - SDU discard mode <ul style="list-style-type: none"> - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info <ul style="list-style-type: none"> - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Windows - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info <ul style="list-style-type: none"> - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info <ul style="list-style-type: none"> - Information for each multiplexing option - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list - MAC logical channel priority - Downlink RLC logical channel info <ul style="list-style-type: none"> - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - Logical channel identity - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list <ul style="list-style-type: none"> - RLC size index - MAC logical channel priority - Downlink RLC logical channel info <ul style="list-style-type: none"> - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity 	0000 0101B PS domain Not Present UseT315 20 TRUE sn65535 present RLC info AM RLC No discard 15 128 500 4 200 200 Not Present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not Present TRUE Not Present 2 RBMuxOptions Not Present 1 DCH 1 7 Configured 8 1 DCH 6 Not Present 7 Not Present 1 RACH Not Present 7 Explicit List Reference to TS34.108 clause 6 Parameter Set 8 1 FACH Not Present Not Present

- Logical channel identity	7
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Test Procedure

Table 7.3.3.8

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 7.3.3.8 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. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDU on the RAB. If ciphering is supported, the a PDCP PDUs has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.8. The SS sends a RADIO BEARER SETUP message on the downlink DCCH using AM RLC requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "Downlink counter synchronisation info" and IE "Integrity protection mode info". UE shall reselect to cell 2 and SS verifies that the UE sends RADIO BEARER SETUP COMPLETE message. This message also includes a calculated new START value according to the formula "START_X' = MSB₂₀ (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 RADIO BEARER SETUP message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

~~<Ciphering is supported.>~~

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.8.

3	←	RADIO BEARER SETUP	If IE "Ciphering mode info" is present in the SECURITY MODE COMMAND during initial condition set-up, this This message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4	→	RADIO BEARER SETUP COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2. If IE "Ciphering mode info" is present in step 3, new 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.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. If IE "Ciphering mode info" is present in step 3, new New ciphering configuration is applied on DL SRB2 with the same value as used in step 4.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER Void	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 4.
9	→	Void UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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 4.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).

10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
12			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
16			<u>If IE "Ciphering mode info" is present in step 3, new</u> New ciphering configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 4.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<<Ciphering is not supported.>>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.8.

3	←	RADIO-BEARER SETUP	IE "Downlink counter synchronisation info" includes the next PCDP sequence number that SS is expected to receive from the UE, otherwise only IE "Downlink counter synchronisation info" is included. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4	→	RADIO-BEARER SETUP COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PCDP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
9	→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
12			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

RADIO BEARER SETUP for PS only UE (Step 3)

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	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	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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
- RB identity	20
- RLC sequence number	Current RLC SN+2
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	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
RAB information for setup - RAB info - RAB identity - CN domain identity - NAS Synchronization Indicator - Re-establishment timer - RB information to setup - RB identity - PDCP info - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header - Header compression information - CHOICE RLC info type - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll	0000 1100B PS domain Not Present UseT315 12 FALSE Not present Absent Not present RLC info AM RLC No discard 15 128 500 4 200 200 Not Present 1 TRUE TRUE

<ul style="list-style-type: none"> - Poll_Windows - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - Information for each multiplexing option - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list - MAC logical channel priority - Downlink RLC logical channel info - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - Logical channel identity - RLC logical channel mapping indicator - Number of uplink RLC logical channels - Uplink transport channel type - UL Transport channel identity - Logical channel identity - CHOICE RLC size list <ul style="list-style-type: none"> - RLC size index - MAC logical channel priority - Downlink RLC logical channel info - Number of downlink RLC logical channels - Downlink transport channel type - DL DCH Transport channel identity - DL DSCH Transport channel identity - Logical channel identity 	<p>99 Not Present AM RLC TRUE 128</p> <p>200 Not Present TRUE Not Present</p> <p>2 RBMuxOptions Not Present</p> <p>1 DCH</p> <p>1 8 Configured 8</p> <p>1 DCH 6 Not Present 8 Not Present</p> <p>1 RACH Not Present 8 Explicit List Reference to TS34.108 clause 6 Parameter Set 8</p> <p>1 FACH Not Present Not Present 8</p>
<p>Downlink counter synchronisation info</p> <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information <ul style="list-style-type: none"> - RB identity - PDCP SN info 	<p>This IE is included</p> <p>20 The next PCDP sequence number that SS is expected to receive from the UE.</p>
<p>Downlink information for each radio links</p> <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	<p>Set to same code as used for cell 2</p>

RADIO BEARER SETUP for CS only UE (Step 3)

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”, with the following exception:

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	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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
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
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
RAB information for setup	
- RAB info	0000 1100B
- RAB identity	CS domain
- CN domain identity	Not Present
- NAS Synchronization Indicator	Not Present
- Re-establishment timer	UseT314
- RB information to setup	
- RB identity	13
- PDCP info	Not Present
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	TM RLC
- Transmission RLC discard	Not Present
- Segmentation indication	FALSE
- CHOICE Downlink RLC mode	TM RLC
- Segmentation indication	FALSE
- 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	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
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	Not Present

Downlink counter synchronisation info - RB with PDCP information list	Not present
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	Set to same code as used for cell 2

RADIO BEARER SETUP COMPLETE for PS only UE (Step 4)

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 - RB with PDCP information - RB identity - PDCP SN info	This IE is checked. 12 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE.
- RB identity - PDCP SN info	20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE.
- START list	Check that this IE is present.

RADIO BEARER SETUP COMPLETE for CS only UE (Step 4)

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.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

7.3.3.8.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 3, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC which includes which includes a calculated new START value according to the formula "START_X' = MSB₂₀(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 SETUP message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. This message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

~~After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL-SRB3.~~

After step 9, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the RADIO BEARER RECONFIGURATION COMPLETE message.

7.3.3.9 Radio Bearer Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Lossless SRNS relocation) (without pending of ciphering)

7.3.3.9.1 Definition

7.3.3.9.2 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".

2> else:

3> include the IE "Downlink counter synchronisation info".

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 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;

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 variable PDCP_SN_INFO is not empty:

2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_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 [36].
- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> perform the actions below.

Reference

3GPP TS 25.331 clause 8.2.2.

7.3.3.9.3 Test purpose

1. [To confirm that the UE performs a combined hard handover and SRNS relocation and then transmit a RADIO BEARER RECONFIGURATION COMPLETE message in the new cell.](#)
2. [In the case that ciphering is applied by the network, to confirm that the UE applies the new ciphering algorithm following a successful SRNS relocation.](#)

7.3.3.9.4 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.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

[If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in \[9\] TS 34.108 clause 9, with the following exceptions:](#)

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P13 as specified in TS 34.108 clause 7.4, use the message titled "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
- PDCP info	
- Support for lossless SRNS relocation	TRUE
- Max PDCP SN window size	sn65535
- PDCP PDU header	present

Test Procedure

Table 7.3.3.9

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 7.3.3.9 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. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1. If ciphering is supported a PDCP PDU has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.9. The SS sends a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM RLC requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "New U-RNTI" and IE "Integrity protection mode info". UE shall reselect to cell 2 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' = MSB₂₀ (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 RADIO BEARER SETUP message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

~~<Ciphering is supported.>~~

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.8.

3	←	RADIO BEARER RECONFIGURATION	If IE "Ciphering mode info" is present in the SECURITY MODE COMMAND during initial condition set-up, this This message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. IE "RB information to reconfigure" includes the next PDCP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4	→	RADIO BEARER RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2. If IE "Ciphering mode info" is present in step 3, new 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.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. If IE "Ciphering mode info" is present in step 3, new New ciphering configuration is applied on DL SRB2 with the same value as used in step 4.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER <u>Void</u>	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 4.
9	→	<u>Void</u> UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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 4.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).

10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
12			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
16			<u>If IE "Cipherring mode info" is present in step 3, new</u> New cipherring configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 4.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Cipherring is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.9.
3		←	RADIO BEARER RECONFIGURATION	IE "RB information to reconfigure" includes the next PCDP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL-SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.

4	→	RADIO-BEARER RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
9	→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
12			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data

15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

RADIO BEARER RECONFIGURATION for PS only UE (Step 3)

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	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	UEA0
- 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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
- RB identity	20
- RLC sequence number	Current RLC SN+2
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
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	(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

<ul style="list-style-type: none"> - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue 	<p>TRUE 400 Not Present Not Present</p>
<ul style="list-style-type: none"> - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info <ul style="list-style-type: none"> - CHOICE Uplink RLC mode <ul style="list-style-type: none"> - Transmission RLC discard <ul style="list-style-type: none"> - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info <ul style="list-style-type: none"> - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode <ul style="list-style-type: none"> - In-sequence delivery - Receiving window size - Downlink RLC status info <ul style="list-style-type: none"> - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue 	<p>(AM DCCH for NAS_DT High priority) 3 Not Present Not Present AM RLC No discard 15 128 400 4 150 150 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE 400 Not Present Not Present</p>
<ul style="list-style-type: none"> - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info <ul style="list-style-type: none"> - CHOICE Uplink RLC mode <ul style="list-style-type: none"> - Transmission RLC discard <ul style="list-style-type: none"> - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info <ul style="list-style-type: none"> - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode <ul style="list-style-type: none"> - In-sequence delivery - Receiving window size - Downlink RLC status info <ul style="list-style-type: none"> - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue 	<p>(AM DCCH for NAS_DT Low priority) 4 Not Present Not Present AM RLC No discard 15 128 400 4 150 150 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not Present TRUE 400 Not Present Not Present</p>
<ul style="list-style-type: none"> - RB information to reconfigure - RB identity 	<p>(AM DTCH) 20</p>

- PDCP info	TRUE
- Support for lossless SRNS relocation	sn65535
- Max PDCP SN window size	Present
- PDCP PDU header	Not present
- Header compression information	The next PCDP sequence number that SS is expected to receive from the UE
- PDCP SN info	
- RLC info	AM RLC
- CHOICE Uplink RLC mode	
- Transmission RLC discard	No discard
- SDU discard mode	15
- MAX_DAT	128
- Transmission window size	400
- Timer_RST	4
- Max_RST	
- 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	400
- RB mapping info	Not Present
- RB stop/continue	Not Present
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	Set to same code as used for cell 2

RADIO BEARER RECONFIGURATION for CS only UE (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled "Speech in CS" or "Non speech in CS", with the following exception:

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	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+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
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
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	(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	400

- RB mapping info - RB stop/continue	Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for NAS_DT High priority) 3 Not Present Not Present AM RLC No discard 15 128 400 4 150 150 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not present TRUE 400 Not Present Not Present
- RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - CHOICE Uplink RLC mode - Transmission RLC discard - SDU discard mode - MAX_DAT - Transmission window size - Timer_RST - Max_RST - Polling info - Timer_poll_prohibit - Timer_poll - Poll_PDU - Poll_SDU - Last transmission PDU poll - Last retransmission PDU poll - Poll_Window - Timer_poll_periodic - CHOICE Downlink RLC mode - In-sequence delivery - Receiving window size - Downlink RLC status info - Timer_status_prohibit - Timer_EPC - Missing PDU indicator - Timer_STATUS_periodic - RB mapping info - RB stop/continue	(AM DCCH for NAS_DT Low priority) 4 Not Present Not Present AM RLC No discard 15 128 400 4 150 150 Not present 1 TRUE TRUE 99 Not Present AM RLC TRUE 128 200 Not Present TRUE 400 Not Present Not Present
Downlink information for each radio links - Primary CPICH info - Primary Scrambling Code	Set to same code as used for cell 2

RADIO BEARER RECONFIGURATION COMPLETE for PS only UE (Step 4)

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 - RB with PDCP information - RB identity - PDCP SN info - START list	This IE is checked 20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE. Check that this IE is present.

RADIO BEARER RECONFIGURATION COMPLETE for CS only UE (Step 4)

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.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

7.3.3.9.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 3, the UE shall transmit a RADIO BEARER 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' = MSB₂₀ (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. This message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

~~After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL-SRB3.~~ After step 9, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the RADIO BEARER RECONFIGURATION COMPLETE message.

7.3.3.10 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Success (Lossless SRNS relocation) (without pending of ciphering)

7.3.3.10.1 Definition

7.3.3.10.2 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".
 - 2> else:
 - 3> include the IE "Downlink counter synchronisation info".

The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info";
 - 2> re-establish 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;
 - 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 variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_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 IE "Downlink counter synchronisation info" was included in the reconfiguration 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 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 [36].
- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> perform the actions below.

Reference

3GPP TS 25.331 clause 8.2.2.

7.3.3.10.3 Test purpose

To confirm that the UE performs a combined hard handover and SRNS relocation and then transmit a RADIO BEARER RELEASE COMPLETE message in the new cell.

7.3.3.10.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and 2

UE: PS+CS-DCCH+DTCH_DCH (state 6-14) or CS+CS-DCCH+DTCH_DCH (state 6-15) or PS+PS-DCCH+DTCH_DCH (state 6-16) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P13 as specified in TS 34.108 clause 7.4, use the message titled "Packet to CELL_DCH from CELL_DCH in PS" as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
- PDCP info - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header	TRUE sn65535 present

Test Procedure

Table 7.3.3.10

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 7.3.3.10 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. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDUs on the RAB. If ciphering is supported, a PDCP PDU has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.10. The SS sends a RADIO BEARER RELEASE message on the downlink DCCH using AM RLC requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "Downlink counter synchronisation info" and IE "Integrity protection mode info". UE shall reselect to cell 2 and SS verifies that the UE sends RADIO BEARER RELEASE COMPLETE message. This message also includes a calculated new START value according to the formula "START_x' = MSB₂₀ (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 RADIO BEARER RELEASE message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

~~<Ciphering is supported.>~~

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.10

3	←	RADIO BEARER RELEASE	This message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. IE "RB information to reconfigure" includes the next PDCP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4	→	RADIO BEARER RELEASE COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be 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.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. New ciphering configuration is applied on DL SRB2 with the same value as used in step 4.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER Void	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 4.
9	→	Void UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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 4.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet

11			<p>After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet.</p> <p>The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.</p>
12			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
16		Void	New ciphering configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 4.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data.
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.10.
3		←	RADIO BEARER RELEASE	IE "RB information to reconfigure" includes the next PDCP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL-SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.

4	→	RADIO-BEARER RELEASE COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
9	→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
12			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data

15		The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)		

Specific Message Contents

RADIO BEARER RELEASE for PS only UE (Step 3)

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	Not present
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info <ul style="list-style-type: none"> - 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
RB information to release <ul style="list-style-type: none"> - RB identity 	18
Downlink counter synchronisation info <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information - RB identity - PDCP SN info 	This IE is included 20 The next PDCP sequence number that SS is expected to receive from the UE.
Downlink information for each radio links <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	Set to same code as used for cell 2

RADIO BEARER RELEASE for CS only UE (Step 3)

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	Not present
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info <ul style="list-style-type: none"> - 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
RB information to release <ul style="list-style-type: none"> - RB identity 	13
Downlink counter synchronisation info <ul style="list-style-type: none"> - RB with PDCP information list 	Not present
Downlink information for each radio links <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	Set to same code as used for cell 2

RADIO BEARER RELEASE COMPLETE for PS only UE (Step 4)

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 <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information - RB identity - PDCP SN info - START list 	This IE is checked 20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE. Check that this IE is present.

RADIO BEARER RELEASE COMPLETE for CS only UE (Step 4)

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 <ul style="list-style-type: none"> - RB with PDCP information list - START list 	Not present Check that this IE is present.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

7.3.3.10.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 3, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC which includes which includes a calculated new START value according to the formula " $START_X' = MSB_{20}(\text{MAX}\{\text{COUNT-C}, \text{COUNT-I}\} | \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X) + 2$ ", 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 RELEASE message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. This message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

~~After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL-SRB3.~~

After step 9, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the RADIO BEARER RELEASE COMPLETE message.

7.3.3.11 Transport Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Lossless SRNS relocation) (without pending of ciphering)

7.3.3.11.1 Definition

7.3.3.11.2 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".
 - 2> else:
 - 3> include the IE "Downlink counter synchronisation info".

The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
 - 2> re-establish 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;
 - 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 variable PDCP_SN_INFO is not empty:
 - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP_SN_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 IE "Downlink counter synchronisation info" was included in the reconfiguration message; or
 - 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 [36].
- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> perform the actions below.

Reference

3GPP TS 25.331 clause 8.2.2.

7.3.3.11.3 Test purpose

To confirm that the UE performs a combined hard handover and SRNS relocation and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message in the new cell.

7.3.3.11.4 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.

Related ICS/IXIT statements

- Lossless SRNS relocation supported yes/no
- Support of RLC in-sequence delivery Yes/No

Specific Message Content

If network applies ciphering, the contents of SECURITY MODE COMMAND message in the initial condition set-up are identical to the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN + 2</u>

For RADIO BEARER SETUP message to be transmitted during P13 as specified in TS 34.108 clause 7.4, use the message titled “Packet to CELL_DCH from CELL_DCH in PS” as found in TS 34.108 clause 9, with the following exception.

Information Element	Value/remark
- PDCP info - Support for lossless SRNS relocation - Max PDCP SN window size - PDCP PDU header	TRUE sn65535 present

Test Procedure

Table 7.3.3.11

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 7.3.3.11 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. If PS RAB has been established in the initial condition, SS initiates UE to enter loopback mode 1 and sends a PDCP PDU on the RAB. If ciphering is supported, a PDCP PDU has to be decided so that the ciphering activation time is elapsed. SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be send back by the UE and then note the next PDCP SN for the next PDCP PDU. SS configures its downlink transmission power settings according to columns "T1" in table 7.3.3.11. The SS sends a TRANSPORT CHANNEL RECONFIGURATION message requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "Downlink counter synchronisation info" and IE "Integrity protection mode info". UE shall reselect to cell 2 and SS verifies that the UE sends TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. This message also includes a calculated new START value according to the formula " $START_X' = MSB_{20} (MAX \{COUNT-C, COUNT-I \mid \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X\}) + 2$ ", 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 TRANSPORT CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration, and "Receive PDCP sequence number".

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).~~ SS resumes the transmission of PDCP PDUs and checks that all transmitted PDCP PDUs are sent back by the UE.

Expected sequence

~~<Ciphering is supported.>~~

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
1b				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of 7.3.3.11.

3	←	TRANSPORT CHANNEL RECONFIGURATION	This message is sent after last ciphering activation time has elapsed and there is no pending ciphering activation time. IE "RB information to reconfigure" includes the next PDCP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be 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.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. New ciphering configuration is applied on DL SRB2 with the same value as used in step 4.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER <u>Void</u>	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 4.
9	→	<u>Void</u> UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 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 4.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet

11			<p>After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet.</p> <p>The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.</p>
12			The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
15			The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
16		Void	New ciphering configuration is applied on UL and DL RAB using the re-initialised COUNT-C HFN by the start value as stored in step 4.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
Activate closed UE test loop mode 1				
				The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
1		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
1a				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
1b				The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
2a				After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data.
2b				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
2c			Void	SS shall suspend the sending of PDCP PDUs and wait for the last PDCP PDU to be sent back by the UE and then note the next PDCP SN for the next PDCP PDU. SS applies the downlink transmission power settings, according to the values in columns "T1" of table 7.3.3.11.
3		←	TRANSPORT CHANNEL RECONFIGURATION	IE "RB information to reconfigure" includes the next PDCP sequence number that SS is expected to receive from the UE. New integrity protection configuration is applied on DL-SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.

4	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE shall transmit this message after it reselects to cell 2. New calculated START value is included. IE "Receive PDCP sequence number" shall be included. New integrity protection configuration is applied on UL SRB2.
5	←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6	→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7	←	UE CAPABILITY INFORMATION CONFIRM	
8	←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
9	→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
			The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU).
10	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet
11			After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression). Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB-LB) entity.
12			The RB-LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
13	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM Data Request Primitive with the following content back to the SS: data: previously received TCP/IP packet
14			After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data

15		The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)		

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION for PS only UE (Step 3)

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	Not present.
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information - RB identity - PDCP SN info 	This IE is included. 20 The next PCDP sequence number that SS is expected to receive from the UE.
Downlink information for each radio links <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	Set to same code as used for cell 2

TRANSPORT CHANNEL RECONFIGURATION for CS only UE (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, which is entitled “Speech in CS” or “Non speech in CS”, with the following exception:

Information Element	Value/remark
Ciphering mode info	Not present.
Integrity protection mode info <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	0000 0000 0010B 0000 0000 0000 0000 0001B
CN Information info <ul style="list-style-type: none"> - PLMN identity - CN common GSM-MAP NAS system information - GSM-MAP NAS system information - CN domain related information <ul style="list-style-type: none"> - CN domain identity - CN domain specific NAS system information - GSM-MAP NAS system information <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - RB with PDCP information list 	Not present
Downlink information for each radio links <ul style="list-style-type: none"> - Primary CPICH info - Primary Scrambling Code 	Set to same code as used for cell 2

TRANSPORT CHANNEL RECONFIGURATION COMPLETE for PS only UE (Step 4)

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 <ul style="list-style-type: none"> - RB with PDCP information list - RB with PDCP information <ul style="list-style-type: none"> - RB identity - PDCP SN info - START list 	This IE is checked 20 Check that the PDCP sequence number is the next sequence number that SS would transmit to the UE. Check that this IE is present.

TRANSPORT CHANNEL RECONFIGURATION COMPLETE for CS only UE (Step 4)

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 <ul style="list-style-type: none"> - RB with PDCP information list - START list 	Not present Check that this IE is present.

Content of PDCP Data PDUs used for entire test case

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

7.3.3.11.5 Test requirement

After step 1, UE shall transmit back all the PDCP PDUs sent by the SS to the UE.

After step 3, the UE shall transmit a TRANSPORT 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' = MSB₂₀ (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 TRANSPORT CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration. This message shall also include IE "Receive PDCP sequence number" for RB#20.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

~~After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL-SRB3.~~

After step 9, UE shall start transmission on the RAB beginning with the PDCP SN equal to that included in the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message.

CHANGE REQUEST

34.123-1 CR 846 # rev **-** # Current version: **5.7.1**

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		
Source:	# Ericsson		
Work item code:	# HSDPA	Date:	# 14/05/2004
Category:	# F	Release:	# REL-5
	Use <u>one</u> 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 <u>one</u> 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 RRC test cases for HSDPA.
Summary of change:	# The following RRC test cases are added:
	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)
	8.2.1.29 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Uplink TFCS restriction, start of HS-DSCH reception)
	8.2.1.30 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, start of HS-DSCH reception)
	8.2.2.38 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success (with active HS-DSCH reception)
	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)
	8.2.6.40 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Two radio links, change of HS-PDSCH configuration)
	8.2.6.41 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, signalling only)

The scenario for this test case is typically when the UE camps on a cell and frequency where the HS-DSCH is not supported and needs to be moved to a cell and frequency where it is supported.

8.2.6.42 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialized hard handover to another frequency, Serving HS-DSCH cell change)

8.3.1.32 Cell Update: Transition from URA_PCH to CELL_DCH, start of HS-DSCH reception

Consequences if not approved: ⌘ Limited test coverage for HSDPA.

Clauses affected: ⌘ 8.2.1.28, 8.2.1.29, 8.2.1.30, 8.2.2.38, 8.2.2.39, 8.2.6.40, 8.2.6.41, 8.2.6.42, 8.3.1.32 (all new)

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

Other comments: ⌘ Affects 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.

8.2.1.27.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

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 SETUP message, 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 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 "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 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".

...

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

8.2.1.28.3 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 testInitial 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>RADIO BEARER SETUP</u>	
<u>2</u>		<u>→</u>	<u>RADIO BEARER SETUP COMPLETE</u>	
<u>3</u>		<u>↔</u>	<u>CALL C.3</u>	<u>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</u>

Specific Message ContentsRADIO 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:

<u>Information Element</u>	<u>Value/remark</u>
<u>New H-RNTI</u>	<u>Not present</u>
<u>RAB information for setup</u>	<u>(high-speed AM DTCH for PS domain)</u>
<u>- RAB info</u>	<u>0000 0110B</u>
<u>- RAB identity</u>	<u>The first/ leftmost bit of the bit string contains the most significant bit of the RAB identity.</u>
<u>- CN domain identity</u>	<u>PS domain</u>
<u>- NAS Synchronization Indicator</u>	<u>Not Present</u>
<u>- Re-establishment timer</u>	<u>useT315</u>
<u>- RB information to setup</u>	<u>(high-speed AM DTCH)</u>
<u>- RB identity</u>	<u>23</u>
<u>- PDCP info</u>	<u>Not Present</u>
<u>- PDCP SN info</u>	<u>Not Present</u>
<u>- RLC info</u>	
<u>- CHOICE Uplink RLC mode</u>	<u>AM RLC</u>
<u>- Transmission RLC discard</u>	
<u>- CHOICE SDU discard mode</u>	<u>No Discard</u>
<u>- MAX_DAT</u>	<u>15</u>
<u>- Transmission window size</u>	<u>128</u>
<u>- Timer_RST</u>	<u>500</u>
<u>- Max_RST</u>	<u>4</u>
<u>- Polling info</u>	
<u>- Timer_poll_prohibit</u>	<u>200</u>
<u>- Timer_poll</u>	<u>200</u>
<u>- Poll_PDU</u>	<u>Not Present</u>
<u>- Poll_SDU</u>	<u>1</u>
<u>- Last transmission PDU poll</u>	<u>TRUE</u>
<u>- Last retransmission PDU poll</u>	<u>TRUE</u>
<u>- Poll_Windows</u>	<u>99</u>
<u>- Timer_poll_periodic</u>	<u>Not Present</u>
<u>- CHOICE Downlink RLC mode</u>	<u>AM RLC</u>
<u>- In-sequence delivery</u>	<u>TRUE</u>
<u>- Receiving window size</u>	<u>128</u>
<u>- Downlink RLC status info</u>	
<u>- Timer_status_prohibit</u>	<u>200</u>
<u>- Timer_EPC</u>	<u>Not Present</u>
<u>- Missing PDU indicator</u>	<u>TRUE</u>
<u>- Timer_STATUS_periodic</u>	<u>Not Present</u>
<u>Added or Reconfigured DL TrCH information</u>	<u>Same as specified for "Packet to CELL_DCH from CELL_DCH in PS" in TS 34.108</u>
<u>Downlink HS-PDSCH Information</u>	<u>Not Present</u>
<u>Downlink information per radio link list</u>	<u>Same as specified for "Packet to CELL_DCH from CELL_DCH in PS" in TS 34.108</u>

8.2.1.28.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

8.2.1.29 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Uplink TFCS restriction, 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 SETUP message, 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 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 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

8.2.1.29.3 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

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 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. 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" 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:

<u>Information Element</u>	<u>Value/remark</u>
<u>UL Transport channel information for all transport channels</u> <u>- UL DCH TFCS</u>	<u>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.</u>
<u>CHOICE channel requirement</u> <u>- Uplink DPCH power control info</u>	<u>Uplink DPCH info</u> <u>Same contents as a RADIO BEARER SETUP message used in initial procedure</u>
<u>- CHOICE mode</u>	<u>FDD</u>
<u>- Scrambling code type</u>	<u>Long</u>
<u>- Scrambling code number</u>	<u>0 (0 to 16777215)</u>
<u>- Number of DPDCH</u>	<u>Not Present</u>
<u>- Spreading factor</u>	<u>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.</u>
<u>- TFCI existence</u>	<u>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.</u>
<u>- Number of FBI bit</u>	<u>Not Present</u>
<u>- Puncturing Limit</u>	<u>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.</u>
<u>Downlink information per radio link list</u>	<u>Not present</u>

8.2.1.29.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

8.2.1.30 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, start of HS-DSCH reception)8.2.1.30.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.1.30.2 Conformance requirement

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 SETUP message, the UE shall:

- 1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

...

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, 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 "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.

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 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 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".

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.6.3.1, 8.6.3.1b, 8.6.5.6, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.2.1.30.3 Test purpose

To confirm that the UE establishes a radio bearer mapped to HS-DSCH and starts HS-DSCH reception in conjunction with a interfrequency hard handover without prior measurement on the target frequency according to the received RADIO BEARER SETUP message.

8.2.1.30.4 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

The UE is in CELL_DCH state. Only signalling radio bearers have been established in cell 1.

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 HS-DSCH as well as a timing re-initialised interfrequency hard handover to cell 6. After the UE receives this message, it establishes the radio bearer and the physical channels in cell 6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC in cell 6. 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:

<u>Information Element</u>	<u>Value/remark</u>
New H-RNTI	'0101 0101 0101 0101'
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
- 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

8.2.1.28.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER SETUP COMPLETE message using AM RLC in cell 6.

8.2.2 Radio Bearer Reconfiguration

8.2.2.37.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

After step 3, 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.

...

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".

Reference

3GPP TS 25.331 clauses 8.2.2, 8.6.3.1, 8.2.2.3

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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>RADIO BEARER RECONFIGURATION</u>	
<u>2</u>		<u>→</u>	<u>RADIO BEARER RECONFIGURATION COMPLETE</u>	
<u>3</u>		<u>↔</u>	<u>CALL C.3</u>	<u>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</u>

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:

<u>Information Element</u>	<u>Value/remark</u>
<u>RB information to reconfigure list</u>	
- <u>RB information to reconfigure</u>	<u>(high-speed AM DTCH)</u>
- <u>RB identity</u>	<u>23</u>
- <u>PDCP info</u>	<u>Not Present</u>
- <u>PDCP SN info</u>	<u>Not Present</u>
- <u>RLC info</u>	
- <u>CHOICE Uplink RLC mode</u>	<u>AM RLC</u>
- <u>Transmission RLC discard</u>	
- <u>CHOICE SDU discard mode</u>	<u>No Discard</u>
- <u>MAX_DAT</u>	<u>15</u>
- <u>Transmission window size</u>	<u>128</u>
- <u>Timer_RST</u>	<u>500</u>
- <u>Max_RST</u>	<u>4</u>
- <u>Polling info</u>	
- <u>Timer_poll_prohibit</u>	<u>200</u>
- <u>Timer_poll</u>	<u>200</u>
- <u>Poll_PDU</u>	<u>Not Present</u>
- <u>Poll_SDU</u>	<u>1</u>
- <u>Last transmission PDU poll</u>	<u>TRUE</u>
- <u>Last retransmission PDU poll</u>	<u>TRUE</u>
- <u>Poll_Windows</u>	<u>99</u>
- <u>Timer_poll_periodic</u>	<u>Not Present</u>
- <u>CHOICE Downlink RLC mode</u>	<u>AM RLC</u>
- <u>In-sequence delivery</u>	<u>TRUE</u>
- <u>Receiving window size</u>	<u>128</u>
- <u>Downlink RLC status info</u>	
- <u>Timer_status_prohibit</u>	<u>200</u>
- <u>Timer_EPC</u>	<u>Not Present</u>
- <u>Missing PDU indicator</u>	<u>TRUE</u>
- <u>Timer_STATUS_periodic</u>	<u>Not Present</u>
- <u>RB mapping info</u>	<u>Not Present</u>
- <u>RB stop/continue</u>	<u>Not Present</u>
<u>Downlink HS-PDSCH Information</u>	
- <u>HS-SCCH Info</u>	<u>Not present</u>
- <u>Measurement Feedback Info</u>	<u>Not present</u>
- <u>CHOICE mode</u>	<u>FDD (no data)</u>

8.2.2.38.5 Test requirements

After step 1, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

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.

...

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 "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 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 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 "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.

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.6.3.1, 8.6.6.32

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_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 in cell 1. 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		←	RADIO BEARER RECONFIGURATION	Hard handover, stop of HS-DSCH reception
2		→	RADIO BEARER RECONFIGURATION COMPLETE	
3		←	RADIO BEARER RECONFIGURATION	Hard handover, start of HS-DSCH reception
4		→	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.

<u>Information Element</u>	<u>Value/remark</u>
<u>RB information to reconfigure list</u>	
- <u>RB information to reconfigure</u>	<u>(high-speed AM DTCH)</u>
- <u>RB identity</u>	<u>23</u>
- <u>PDCP info</u>	<u>Not Present</u>
- <u>PDCP SN info</u>	<u>Not Present</u>
- <u>RLC info</u>	
- <u>CHOICE Uplink RLC mode</u>	<u>AM RLC</u>
- <u>Transmission RLC discard</u>	
- <u>CHOICE SDU discard mode</u>	<u>No Discard</u>
- <u>MAX_DAT</u>	<u>15</u>
- <u>Transmission window size</u>	<u>128</u>
- <u>Timer_RST</u>	<u>500</u>
- <u>Max_RST</u>	<u>4</u>
- <u>Polling info</u>	
- <u>Timer_poll_prohibit</u>	<u>200</u>
- <u>Timer_poll</u>	<u>200</u>
- <u>Poll_PDU</u>	<u>Not Present</u>
- <u>Poll_SDU</u>	<u>1</u>
- <u>Last transmission PDU_poll</u>	<u>TRUE</u>
- <u>Last retransmission PDU_poll</u>	<u>TRUE</u>
- <u>Poll_Windows</u>	<u>99</u>
- <u>Timer_poll_periodic</u>	<u>Not Present</u>
- <u>CHOICE Downlink RLC mode</u>	<u>AM RLC</u>
- <u>In-sequence delivery</u>	<u>TRUE</u>
- <u>Receiving window size</u>	<u>128</u>
- <u>Downlink RLC status info</u>	
- <u>Timer_status_prohibit</u>	<u>200</u>
- <u>Timer_EPC</u>	<u>Not Present</u>
- <u>Missing PDU indicator</u>	<u>TRUE</u>
- <u>Timer_STATUS_periodic</u>	<u>Not Present</u>
- <u>RB mapping info</u>	<u>Not Present</u>
- <u>RB stop/continue</u>	<u>Not Present</u>
<u>Frequency info</u>	
- <u>UARFCN uplink(Nu)</u>	<u>Same uplink UARFCN as used for cell 6</u>
- <u>UARFCN downlink(Nd)</u>	<u>Same downlink UARFCN as used for cell 6</u>
<u>Downlink information common for all radio links</u>	
- <u>Downlink DPCH info common for all RL</u>	
- <u>Timing indication</u>	<u>Initialise</u>
- <u>CFN-targetSFN frame offset</u>	<u>0</u>
- <u>Downlink DPCH power control information</u>	<u>Not Present</u>
- <u>Downlink rate matching restriction information</u>	<u>Not Present</u>
- <u>Spreading factor</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>Fixed or flexible position</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>TFCI existence</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>CHOICE SF</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>DPCH compressed mode info</u>	<u>Not present</u>
- <u>TX Diversity mode</u>	<u>Not Present</u>
- <u>SSTD information</u>	<u>Not Present</u>
- <u>Default DPCH Offset Value</u>	<u>Arbitrary set to value 0..306688 by step of 512</u>
- <u>MAC-hs reset indicator</u>	<u>TRUE</u>
<u>Downlink information per radio link list</u>	<u>1 radio link</u>
<u>Downlink information for each radio link</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>Primary CPICH info</u>	<u>Set to the scrambling code for cell 6</u>
- <u>Cell ID</u>	<u>Not present</u>
- <u>PDSCH with SHO DCH info</u>	<u>Not present</u>
- <u>PDSCH code mapping</u>	<u>Not present</u>
- <u>Serving HS-DSCH radio link indicator</u>	<u>FALSE</u>
- <u>Downlink DPCH info for each RL</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>Primary CPICH usage for channel estimation</u>	<u>Primary CPICH may be used</u>
- <u>DPCH frame offset</u>	<u>Set to value of DPCH Frame Offset modulo 38400</u>
- <u>Secondary CPICH info</u>	<u>Not present</u>
- <u>DL channelisation code</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>Secondary scrambling code</u>	<u>Not present</u>
- <u>Spreading factor</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>

- 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:](#)

<u>Information Element</u>	<u>Value/remark</u>
New H-RNTI	'0101 0101 0101 0101'
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	Not Present
- RB stop/continue	Not Present
Downlink HS-PDSCH Information	
- HS-SCCH Info	Not present
- Measurement Feedback Info	Not present
- CHOICE mode	FDD (no data)
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.](#)

8.2.3 Radio Bearer Release

8.2.6.39.5 Test requirement

After step 3, 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' = MSB₂₀ (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 PHYSICAL CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL SRB3.

(In the case where ciphering is supported)After step 9, UE shall start new ciphering configuration on the RAB.

8.2.6.40 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Two radio links, change of HS-PDSCH configuration)

8.2.6.40.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.6.40.2 Conformance requirement

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 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 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".

Reference

3GPP TS 25.331 clauses 8.2.2, 8.6.3.1, 8.6.6.4, 8.6.6.27, 8.6.6.32

8.2.6.40.3 Test purpose

To confirm that, when two radio links are used, the UE changes HS-DSCH specific uplink DPCH power control and measurement feedback configuration according to the received PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.40.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 2 are active

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

Table 8.2.6.40

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA_RF_Channel Number		Ch. 1		Ch. 1	
CPICH E _c	dBm/3.84MHz	-60	-60	-70	-60

Table 8.2.6.40 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_DCH state and has a radio bearer mapped on HS-DSCH established in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.40. UE shall be triggered to transmit 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. The SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC to add cell 2 to the active set. 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 cell 1 shall be kept as the serving HS-DSCH cell. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. At the activation time the UE changes the HS-PDSCH configuration. Finally the UE transmits 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				SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.40.
2	→		MEASUREMENT REPORT	See specific message contents for this message
3		←	ACTIVE SET UPDATE	The SS instructs the UE to add cell 2 in the active set.
4	→		ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
5		←	PHYSICAL CHANNEL RECONFIGURATION	
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

MEASUREMENT REPORT (Step 2)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Integrity check info</u> - <u>Message authentication code</u> - <u>RRC Message sequence number</u>	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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. 1
<u>Measurement identity</u> <u>Measured Results</u> - <u>Intra-frequency measured results</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>Cell synchronisation information</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u> - <u>CPICH Ec/N0</u> - <u>CPICH RSCP</u> - <u>Pathloss</u>	Check to see if measurement results for 2 cells are included (the order in which the different cells are reported is not important) <u>Checked that this IE is absent</u> <u>Checked that this IE is absent</u> <u>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is present</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is present and includes IE COUNT-C-SFN frame difference</u> <u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is present</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is absent</u> <u>Checked that this IE is absent</u>
<u>Measured results on RACH</u> <u>Additional measured results</u> <u>Event results</u> - <u>Intra-frequency measurement event results</u> - <u>Intra-frequency event identity</u> - <u>Cell measurement event results</u> - <u>Primary CPICH info</u> - <u>Primary scrambling code</u>	1a <u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u>

ACTIVE SET UPDATE (Step 3)

<u>Information Element</u>	<u>Value/remark</u>
<u>Radio link addition information</u>	
- <u>Primary CPICH Info</u>	
- <u>Primary scrambling code</u>	<u>Primary scrambling code of Cell 2</u>
- <u>Downlink DPCH info for each RL</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>Primary CPICH usage for channel estimation</u>	<u>P-CPICH may be used.</u>
- <u>DPCH frame offset</u>	<u>Calculated value from Cell synchronisation information</u>
- <u>Secondary CPICH info</u>	<u>Not present</u>
- <u>DL channelisation code</u>	<u>This IE is repeated for all existing downlink DPCHs allocated to the UE</u>
- <u>Secondary scrambling code</u>	<u>Not present</u>
- <u>Spreading factor</u>	<u>Refer to the parameter set in TS 34.108</u>
- <u>Code number</u>	<u>For each DPCH, assign the same code number in the current code given in cell 1.</u>
- <u>Scrambling code change</u>	<u>Not present</u>
- <u>TPC combination index</u>	<u>1</u>
- <u>SSDT cell identity</u>	<u>Not present</u>
- <u>Close loop timing adjustment mode</u>	<u>Not present</u>
- <u>TFCI combining indicator</u>	<u>TRUE</u>
- <u>SCCPCH information for FACH</u>	<u>Not present</u>

PHYSICAL 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:

<u>Information Element</u>	<u>Value/remark</u>
<u>CHOICE channel requirement</u>	<u>Uplink DPCH info</u>
- <u>Uplink DPCH power control info</u>	
- <u>DPCCH power offset</u>	<u>-6dB</u>
- <u>PC Preamble</u>	<u>1 frame</u>
- <u>SRB delay</u>	<u>7 frames</u>
- <u>Power Control Algorithm</u>	<u>Algorithm1</u>
- <u>TPC step size</u>	<u>1dB</u>
- <u>Δ_{ACK}</u>	<u>6</u>
- <u>Δ_{NACK}</u>	<u>6</u>
- <u>Ack-Nack repetition factor</u>	<u>2</u>
- <u>Scrambling code type</u>	<u>Long</u>
- <u>Scrambling code number</u>	<u>0 (0 to 16777215)</u>
- <u>Number of DPDCH</u>	<u>Not Present(1)</u>
- <u>spreading factor</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>TFCI existence</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>Number of FBI bit</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
- <u>Puncturing Limit</u>	<u>Reference to TS34.108 clause 6.10 Parameter Set</u>
<u>Downlink HS-PDSCH Information</u>	
- <u>HS-SCCH Info</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>DL Scrambling Code</u>	
- <u>HS-SCCH Channelisation Code Information</u>	
- <u>HS-SCCH Channelisation Code</u>	<u>1</u>
- <u>Measurement Feedback Info</u>	
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>POhsdsch</u>	<u>6 dB</u>
- <u>CQI Feedback cycle, k</u>	<u>8 ms</u>
- <u>CQI repetition factor</u>	<u>2</u>
- <u>Δ_{CQI}</u>	<u>5 (corresponds to 0dB in relative power offset)</u>
- <u>CHOICE mode</u>	<u>FDD (no data)</u>
<u>Downlink information for each radio link list</u>	<u>Not present</u>

8.2.6.40.5 Test requirements

After step 1, the UE shall transmit a MEASUREMENT REPORT message.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8.2.6.41 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialised hard handover to another frequency, signalling only)

8.2.6.41.1 Definition and applicability

8.2.6.41.2 Conformance requirement

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 PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

1> the procedure ends.

...

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.

Reference

3GPP TS 25.331 clause 8.2.2, 8.3.5.1.2.

8.2.6.41.3 Test purpose

To confirm that the UE makes a timing re-initialised interfrequency hard handover on a signalling only configuration without prior measurement on the target frequency according to the received PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.41.4 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.

Test Procedure

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes new frequency information and IE "Timing indicator" set to initialise. The UE shall reconfigure the physical channel parameters according to PHYSICAL CHANNEL RECONFIGURATION message and establish a radio link with the SS using a dedicated physical channel in cell 6. The UE then transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message in cell 6 on the uplink DCCH AM RLC after its transition. 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>PHYSICAL CHANNEL RECONFIGURATION</u>	
<u>2</u>		<u>→</u>	<u>PHYSICAL CHANNEL RECONFIGURATION COMPLETE</u>	
<u>3</u>		<u>↔</u>	<u>CALL C.3</u>	<u>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</u>

Specific Message Contents

PHYSICAL 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:

<u>Information Element</u>	<u>Value/remark</u>
New H-RNTI	'0101 0101 0101 0101'
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	Not Present
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
- 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

8.2.6.41.5 Test requirements

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 6.

8.2.6.42 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Timing re-initialized hard handover to another frequency, Serving HS-DSCH cell change)

8.2.6.42.1 Definition and applicability

All UEs which support FDD and HS-PDSCH.

8.2.6.42.2 Conformance requirement

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 PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

1> the procedure ends.

...

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, 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 "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 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".

Reference

3GPP TS 25.331 clauses 8.2.2, 8.3.5.1.2, 8.6.3.1, 8.6.3.1b, 8.6.6.4, 8.6.6.27, 8.6.6.32

8.2.6.42.3 Test purpose

To confirm that the UE is able to perform a timing re-initialised hard handover to another frequency without prior measurement on the target frequency in conjunction with a serving HS-DSCH cell change according to the received PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.42.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 on frequency f_1 , and cell2 on frequency f_2 . Cells 1 and 2 have different primary scrambling codes.

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 in cell 1.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE ordering the UE to change to Cell 2 on frequency f_2 . At the activation time the UE changes to Cell 2 keeping the HS-PDSCH configuration. Finally the UE transmits 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>		<u>←</u>	<u>PHYSICAL CHANNEL RECONFIGURATION</u>	<u>The SS instructs the UE to change to Cell 2.</u>
<u>2</u>		<u>→</u>	<u>PHYSICAL CHANNEL RECONFIGURATION COMPLETE</u>	
<u>3</u>		<u>↔</u>	<u>CALL C.3</u>	<u>If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.</u>

Specific Message ContentsPHYSICAL 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:

<u>Information Element</u>	<u>Value/remark</u>
New H-RNTI	'0101 0101 0101 0101'
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Downlink HS-PDSCH Information	
- HS-SCCH Info	
- CHOICE mode	FDD
- DL Scrambling Code	
- HS-SCCH Channelisation Code Information	
- HS-SCCH Channelisation Code	2
- Measurement Feedback Info	
- CHOICE mode	FDD
- P _{OHsdSCH}	6 dB
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	1
- Δ _{CQI}	5 (corresponds to 0dB in relative power offset)
- CHOICE mode	FDD (no data)
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 2
- 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

[8.2.6.42.5 Test requirements](#)

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

8.2.7 Physical Shared Channel Allocation [TDD only]

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.

8.3.1.32 Cell Update: Transition from URA_PCH to CELL_DCH, start of HS-DSCH reception

8.3.1.32.1 Definition

8.3.1.32.2 Conformance requirement

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.

...

A UE shall initiate the cell update procedure in the following cases:

1> Paging response:

...

...

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 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 "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 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".

...

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 8.1.2, 8.3.1, 8.6.3.1, 8.6.3.1b, 8.6.5.6, 8.6.6.32, 8.6.6.33, 8.6.6.34

8.3.1.32.3 Test purpose

To confirm that the UE enters the CELL_DCH state after it receives a CELL_UPDATE_CONFIRM message with a physical channel configuration causing it to start HS-DSCH reception.

8.3.1.32.4 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.

Test Procedure

The UE is in the CELL_DCH state and has a radio bearer established that is mapped to HS-DSCH. The SS transmits a PHYSICAL_CHANNEL_RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE message using AM RLC and enters URA_PCH state.

The SS transmits a PAGING_TYPE_1 message. The UE enters the CELL_FACH state to transmit a CELL_UPDATE message using uplink CCCH in respond to the paging.

The SS transmits CELL_UPDATE_CONFIRM message which includes DPCH and HS-PDSCH physical channel parameters on the downlink DCCH. Then the UE resumes HS-DSCH reception and transmit a PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			PHYSICAL_CHANNEL_RECONFIGURATION	
2			PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE	The UE enters the URA_PCH state
3		←	PAGING_TYPE_1	
4		→	CELL_UPDATE	The UE enters the CELL_FACH state.
5		←	CELL_UPDATE_CONFIRM	
6		→	PHYSICAL_CHANNEL_RECONFIGURATION_COMPLETE	The UE enters the CELL_DCH state and starts HS-DSCH reception.

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 Annex A with following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>New C-RNTI</u>	<u>Not Present</u>
<u>RRC State Indicator</u>	<u>URA_PCH</u>
<u>UTRAN DRX cycle length coefficient</u>	<u>3</u>
<u>URA Identity</u>	<u>0000 0000 0000 0001B</u>

CELL UPDATE (Step 4)

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:

<u>Information Element</u>	<u>Value/remark</u>
<u>U-RNTI</u>	<u>Check to see if set to value assigned in cell</u>
<u>- S-RNTI</u>	<u>1.</u>
<u>- SRNC Identity</u>	<u>Check to see if set to value assigned in cell</u>
	<u>1.</u>
<u>Cell Update Cause</u>	<u>Check to see if set to "Paging response"</u>

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in TS 34.108 clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
<u>New H-RNTI</u>	<u>'1010 1010 1010 1010'</u>
<u>RRC State indicator</u>	<u>CELL_DCH</u>
<u>CHOICE channel requirement</u>	<u>Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.</u>
<u>Downlink information common for all radio links</u>	<u>Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.</u>
<u>Downlink HS-PDSCH Information</u>	<u>Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.</u>
<u>Downlink information per radio link list</u>	<u>Same as the set defined in RADIO BEARER SETUP message found in TS 34.108 clause 9 under condition A9.</u>

8.3.1.32.5 Test requirement

After step 1, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 3, the UE shall transmit a CELL UPDATE message.

After step 5, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

3GPP TSG T1 Meeting #23
 Beijing, China, 10th – 14th May 2004

T1-040975

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 847 ⌘ rev ⌘ Current version: 5.7.1 ⌘

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 Seamless SRNS relocation RRC test cases (Revision to T1-040712)		
Source:	⌘ Panasonic		
Work item code:	⌘ TEI	Date:	⌘ 14/5/04
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 UE must support ciphering. However it is optional in the case of network to apply ciphering. Hence the test cases in this CR have to be revised to allow both network applies ciphering and network does not apply ciphering cases to be tested. New corrections in T1-040975 (highlight in green) The added IXIT are not appropriate and unnecessary. The revised message content of UTRAN MOBILITY INFORMATION in TC 8.3.3.3 is only applicable to PS testing. The revised message content of PHYSICAL CHANNEL RECONFIGURATION in TC 8.2.6.39 is only applicable to PS testing.
Summary of change:	⌘ TC 8.3.3.3 1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message. 2. New IXIT statement added. 3. In step 1 of the expected sequence, it is clarified that the SS will send the UTRAN MOBILITY INFORMATION message after the last ciphering activation time has elapsed, in the case ciphering is applied by SS. 4. In step 2, 3, 6 and 7, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages. 5. In step 3, 6 and 7 of the expected sequence, the START value should refer to the START value received in step 2, instead of step 4 6. Contents for IE "Ciphering mode info" are added to specific message content of UTRAN MOBILITY INFORMATION message in step 1 to request for a change in ciphering algorithm during SRNS relocation.

7. The header of message content of UTRAN MOBILITY INFORMATION in step 1 is revised to indicate that it is only applicable for PS testing.

TC 8.2.6.39

1. New test purpose added to confirm that UE use the new ciphering algorithm as given in the dedicated message.
2. New IXIT statement added.
3. In step 3 of the expected sequence, it is clarified that the SS will send the PHYSICAL CHANNEL RECONFIGURATION message after the last ciphering activation time has elapsed, in the case ciphering is applied by SS.
4. In step 4, 5, 8 and 9, it is clarified that ciphering is applied by SS, then UE shall use the new ciphering algorithm both on the uplink and downlink messages.
5. Contents for IE "Ciphering mode info" are added to specific message content of PHYSICAL CHANNEL RECONFIGURATION message in step 3 to request for a change in ciphering algorithm during SRNS relocation.
6. The header of message content of PHYSICAL CHANNEL RECONFIGURATION in step 3 is revised to indicate that it is only applicable for PS testing.

Consequences if not approved: ⌘ Improper test coverage.

Clauses affected: ⌘ 8.3.3.3, 8.2.6.39

	Y	N		⌘
Other specs affected:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Test specifications	
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications	

Other comments: ⌘ Affects R'99, 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.

8.3.3.3 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 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 RB_m be the signalling radio bearer where the reconfiguration message was received and let RB_n 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 RB_m 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 RB_m from and including the received configuration message;
- 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB_n 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 ciphering algorithm following a successful 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 " $START_X' = MSB_{20}(\text{MAX}\{\text{COUNT-C}, \text{COUNT-I} \mid \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X\}) + 2$ ", 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

~~<Ciphering is supported.>~~

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 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 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.
3		←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. If IE "Ciphering mode info" is present in step 1, new New ciphering configuration is applied on DL SRB2 with the same START value as used in step 4.
4		→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on SRB2 by UE.
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 New ciphering configuration is applied on DL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 4.
7		→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE. If IE "Ciphering mode info" is present in step 1, new New ciphering configuration is applied on UL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 4.

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
1		←	UTRAN MOBILITY INFORMATION	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.
3		←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
4		→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
5		←	UE CAPABILITY INFORMATION CONFIRM	
6		←	IDENTITY REQUEST	New integrity protection configuration is applied on DL SRB3.
7		→	IDENTITY RESPONSE	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.

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	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
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
New U-RNTI	
- SRNC Identity	An arbitrary 12-bits string which is different from original SRNC
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	Not Present
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 specific DRX cycle length coefficient	7
- CN domain identity	CS
- CN domain specific NAS system information	
- GSM-MAP NAS system information	1E 01H
- CN domain specific DRX cycle length coefficient	7
Downlink counter synchronisation info	
- RB with PDCP information list	Not Present

UTRAN MOBILITY INFORMATION CONFIRM (Step 2)

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	Check that this IE is not present.
- START list	Check that this IE is 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' = MSB₂₀ (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.

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.

8.2.6.39 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Seamless SRNS relocation) (without pending of ciphering)

8.2.6.39.1 Definition

8.2.6.39.2 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".

2> else:

3> include the IE "Downlink counter synchronisation info".

The UE shall:

1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or

2> re-establish 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;

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 IE "Downlink counter synchronisation info" was included in the reconfiguration message; or
- 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 [36].

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.6.39.3 Test purpose

- 1. To confirm that the UE performs a combined hard handover and SRNS relocation and then transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message in the new cell.
- 2. [In the case that ciphering is applied by the network, to confirm that the UE applies the new ciphering algorithm following a successful SRNS relocation.](#)

8.2.6.39.4 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 8.2.6.39

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 8.2.6.39 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 8.2.6.39. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message requesting the UE to do a handover combined with SRNS relocation. This message includes IE "RRC State Indicator" set to "CELL_DCH", IE "Downlink counter synchronisation info" and IE "Integrity protection mode info". 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 " $START_X' = MSB_{20}(\text{MAX}\{\text{COUNT-C}, \text{COUNT-I}\} | \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X) + 2$ ", 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 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. The UE shall respond IDENTITY RESPONSE message on the uplink DCCH using RLC-AM (SRB3).

Expected sequence

<Ciphering is supported.>

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2. 36.3039 .
3		←	PHYSICAL CHANNEL RECONFIGURATION	<u>If IE "Ciphering mode info" is present in the SECURITY MODE COMMAND during initial condition set-up, this 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 SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.</u>
4		→	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. <u>If IE "Ciphering mode info" is present in step 3, new 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.</u>
5		←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2. <u>If IE "Ciphering mode info" is present in step 3, new New ciphering configuration is applied on DL SRB2 with the same value as used in step 4.</u>
6		→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7		←	UE CAPABILITY INFORMATION CONFIRM	
8		←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3. <u>If IE "Ciphering mode info" is present in step 3, new New ciphering configuration is applied on DL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 4.</u>
9		→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE. <u>If IE "Ciphering mode info" is present in step 3, new New ciphering configuration is applied on UL SRB3 using the re-initialised COUNT-C HFN by the start value as stored in step 4.</u>
10		↔	Void	

<Ciphering is not supported.>

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	-SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.1.27.
3		←	PHYSICAL CHANNEL RECONFIGURATION	New integrity protection configuration is applied on DL SRB1. LAI and RAI of cell 2 are given to the UE, and are the same as cell 1.
4		→	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.
5		←	UE CAPABILITY ENQUIRY	New integrity protection configuration is applied on DL SRB2.
6		→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
7		←	UE CAPABILITY INFORMATION CONFIRM	
8		←	DOWNLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY REQUEST. New integrity protection configuration is applied on DL SRB3.
9		→	UPLINK DIRECT TRANSFER	NAS message embedded in this is IDENTITY RESPONSE. SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
10			Void	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 3) — 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	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 the algorithm that is similar to 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	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+2
- RB identity	2
- RLC sequence number	Current RLC SN+2
- RB identity	3
- RLC sequence number	Current RLC SN+2
- RB identity	4
- RLC sequence number	Current RLC SN+2
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
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
Downlink counter synchronisation info	
- RB with PDCP information list	Not 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 4)

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.

UE CAPABILITY ENQUIRY (Step 5)

Use the same message sub-type found in [9] TS 34.108 clause 9.

UE CAPABILITY INFORMATION (Step 6)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9.

UE CAPABILITY INFORMATION CONFIRM (Step 7)

Use the same message sub-type found in [9] TS 34.108 clause 9.

8.2.6.39.5 Test requirement

After step 3, 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 " $START_X = MSB_{20} (MAX \{COUNT-C, COUNT-I \mid \text{radio bearers and signalling radio bearers using the most recently configured } CK_X \text{ and } IK_X\}) + 2$ ", 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 PHYSICAL CHANNEL RECONFIGURATION message and COUNT-I that includes subsequent HFN as used in the old integrity protection configuration.

After step 5, the UE shall respond with a UE CAPABILITY INFORMATION message to SS.

After step 8, the UE shall respond with an IDENTITY RESPONSE message to SS and apply new ciphering configuration on UL SRB3.

(In the case where ciphering is supported)After step 9, UE shall start new ciphering configuration on the RAB.

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T1-040976 ⌘

CR-Form-v7
CHANGE REQUEST
⌘ TS 34.123-1 CR 848 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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:	⌘ New SRNS relocation test cases (Revision of T1-040714)		
Source:	⌘ Panasonic		
Work item code:	⌘ TEI Date: ⌘ 14/5/04		
Category:	⌘ F Release: ⌘ Rel-5 Use <u>one</u> of the following categories: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%; vertical-align: top;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%; vertical-align: top;"> Use <u>one</u> 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) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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)
F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> 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 current no test case that covers the behaviour of the UE when UE is asked to change its security configuration before the current pending security configuration has elapsed. New corrections in T1-040976 (highlight in green) The message content of SECURITY MODE COMMAND in step 1 is only applicable to PS testing. The message content of PHYSICAL CHANNEL RECONFIGURATION in step 4 is only applicable to PS testing.
Summary of change:	⌘ New test case 8.2.6.40 is added 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 . The header of message content of SECURITY MODE COMMAND in step 1 is revised to indicate that it is only applicable for PS testing. The header of message content of PHYSICAL CHANNEL RECONFIGURATION in step 4 is revised to indicate that it is only applicable for PS testing.
Consequences if not approved:	⌘ Insufficient test coverage.

Clauses affected:	⌘ 8.2.6.40
	<input type="checkbox"/> Y <input type="checkbox"/> N

Other specs affected:	⌘	<input checked="" type="checkbox"/>	Other core specifications	⌘	34.123-2
		<input checked="" type="checkbox"/>	Test specifications		
		<input checked="" type="checkbox"/>	O&M Specifications		
Other comments:	⌘	Affects R'99, 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.

8.2.6.40 Physical Channel Reconfiguration for transition from CELL_DCH to CELL_DCH: Success (Seamless SRNS relocation with pending of ciphering)

8.2.6.40.1 Definition

8.2.6.40.2 Conformance requirement

<from sub-clause 8.2.2.2>

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 RB2;

- 2> for the downlink and the uplink, apply the ciphering configuration as follows:

- 3> if the received re-configuration 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, 8.6.3.4.

8.2.6.40.3 Test purpose

1. 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 .

8.2.6.40.4 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 8.2.6.40

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	<u>dBm/3.84MHz</u>	<u>-60</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>

Table 8.2.6.40 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 8.2.6.40. 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 IE "Integrity protection mode info". 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' = MSB₂₀(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 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 8.2.6.40.
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 SRB1. 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 integrity protection configuration is applied on DL SRB2. New ciphering configuration is applied on DL SRB2 with the same value as used in step 5.
7		→	UE CAPABILITY INFORMATION	SS confirms that new integrity protection configuration is applied on UL SRB2 by UE.
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 SRB2 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:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA0 or UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+50</u>

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:

<u>Information Element</u>	<u>Value/remark</u>
<u>Ciphering mode info</u>	
- <u>Ciphering mode command</u>	<u>Start/restart</u>
- <u>Ciphering algorithm</u>	<u>UEA0 or UEA1</u>
- <u>Ciphering activation time for DPCH</u>	<u>Not Present</u>
- <u>Radio bearer downlink ciphering activation time info</u>	
- <u>Radio bearer activation time</u>	
- <u>RB identity</u>	<u>1</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>3</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
- <u>RB identity</u>	<u>4</u>
- <u>RLC sequence number</u>	<u>Current RLC SN+2</u>
<u>Integrity protection mode info</u>	
- <u>Integrity protection mode command</u>	<u>Start</u>
- <u>Downlink integrity protection activation info</u>	<u>Not Present</u>
- <u>Integrity protection algorithm</u>	<u>UIA1</u>
- <u>Integrity protection initialisation number</u>	<u>SS selects an arbitrary 32 bits number for FRESH</u>
<u>New U-RNTI</u>	
- <u>SRNC identity</u>	<u>0000 0000 0010B</u>
- <u>S-RNTI</u>	<u>0000 0000 0000 0000 0001B</u>
<u>CN Information info</u>	
- <u>PLMN identity</u>	<u>Not present</u>
- <u>CN common GSM-MAP NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>00 01H</u>
- <u>CN domain related information</u>	
- <u>CN domain identity</u>	<u>PS</u>
- <u>CN domain specific NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>05 00H</u>
- <u>CN domain identity</u>	<u>CS</u>
- <u>CN domain specific NAS system information</u>	
- <u>GSM-MAP NAS system information</u>	<u>1E 01H</u>
<u>Downlink counter synchronisation info</u>	
- <u>RB with PDCP information list</u>	<u>Not Present.</u>
<u>Downlink information for each radio links</u>	
- <u>Primary CPICH info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 2</u>

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step 5)

Check that the UE uses the same message sub-type found in TS 34.108 clause 9, with the following exception.

<u>Information Element</u>	<u>Value/remark</u>
<u>Uplink counter synchronisation info</u> <u>- RB with PDCP information list</u> <u>- START list</u>	<u>Not present</u> <u>Check that this IE is present.</u>

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.

8.2.6.40.5 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 " $START_x = MSB_{20}(MAX \{COUNT-C, COUNT-I \mid \text{radio bearers and signalling radio bearers using the new } CK_x \text{ and } IK_x \text{ from step 1}\}) + 2$ ", 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.

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.

CHANGE REQUEST

⌘ **34.123-1 CR 827** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ Revisions to Package 3 measurement test cases 8.4.1.31 and 8.4.1.40 (Revision of T1-040665)				
Source:	⌘ Anite				
Work item code:	⌘ TEI	Date:	⌘ 14/05/2004		
Category:	⌘ F	Release:	⌘ Rel-5		
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:		
	F (correction)		2	(GSM Phase 2)	
	A (corresponds to a correction in an earlier release)		R96	(Release 1996)	
	B (addition of feature),		R97	(Release 1997)	
	C (functional modification of feature)		R98	(Release 1998)	
	D (editorial modification)		R99	(Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4	(Release 4)	
			Rel-5	(Release 5)	
			Rel-6	(Release 6)	

Reason for change:	⌘ 8.4.1.31 The measurement reporting interval in the MEASUREMENT CONTROL message is 1000 ms but the TGPS Reconfiguration CFN is longer than this interval so compressed mode measurements will not have been started after 1000 ms. At step 8, if compressed mode is configured only one measurement object may be ready when the reporting interval expires so the resulting MEASUREMENT REPORT will only contain a single measured object. 8.4.1.40 In table 8.4.1.40.4.2, the BCCH ARFCN of GSM cell 2 is set to 7 but the MEASUREMENT CONTROL message gives its value as 3. In the test procedure it refers to cells 3 to 12 but 16 cells are monitored.
Summary of change:	⌘ 8.4.1.31 The measurement reporting interval in the MEASUREMENT CONTROL message is increased to 4000 ms and the test procedure refers to this reporting interval of 4000 ms. At step 8, new MEASUREMENT REPORT messages are described to handle the situation where a UE requires compressed mode and may only be able to report a single measured object at the end of the first reporting period.

8.4.1.40

The BCCH ARFCN for inter-rat cell id 1 is modified to 7 to match the data given in table 8.4.1.40.2. Also, the BCCH ARFCN for the inter-rat cells with id 11 and 3 is updated to 17 so that it is different from the value for inter-rat cell id 1.

The test procedure is updated to refer to GSM cells 3 to 16.

Revision:

Editorial Correction to Table Headings

Consequences if not approved:

⌘ The UE would not behave in the expected manner.

Clauses affected:

⌘ 8.4.1.31, 8.4.1.40

Other specs affected:

	Y	N		⌘
			Other core specifications	
			Test specifications	
			O&M Specifications	

Other comments:

⌘

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 MODIFIED SECTION >>

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
BCCCH 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 Initial 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
<p>Downlink information common for all radio links</p> <ul style="list-style-type: none"> - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP CHOICE UL/DL Mode <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP CHOICE UL/DL Mode <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort 	<p>1</p> <p>Deactivate</p> <p>Not present</p> <p>GSM Carrier RSSI Measurement</p> <p>Infinity</p> <p>4</p> <p>7</p> <p>Not present</p> <p>undefined</p> <p>12</p> <p>Not present</p> <p>Mode 0</p> <p>Mode 0</p> <p>UL&DL or UL-only or DL-only (depends on UE's Measurement capability)</p> <p>SF/2</p> <p>SF/2</p> <p>A</p> <p>2.0</p> <p>1.0</p> <p>Not Present</p> <p>Not Present</p> <p>Not Present</p> <p>Not Present</p> <p>2</p> <p>Deactivate</p> <p>Not present</p> <p>GSM Initial BSIC identification</p> <p>Infinity</p> <p>4</p> <p>7</p> <p>Not present</p> <p>undefined</p> <p>8</p> <p>Not present</p> <p>Mode 0</p> <p>Mode 0</p> <p>UL&DL or UL-only or DL-only (depends on UE's Measurement capability)</p> <p>SF/2</p> <p>SF/2</p> <p>A</p> <p>2.0</p> <p>1.0</p> <p>Not Present</p> <p>Not Present</p> <p>128</p> <p>Not Present</p>

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	15

Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Periodical reporting
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
Additional measurements list	
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Remove no inter-RAT cells
CHOICE Inter-RAT Cell Removal	0
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC1
- BSIC	DCS 1800 band used
- Band indicator	1
- BCCH ARFCN	1
- inter-RAT cell id	GSM
CHOICE Radio Access Technology	0
- Cell individual offset	Not present
- Cell selection and re-selection info	BSIC2
- BSIC	DCS 1800 band used
- Band indicator	7
- BCCH ARFCN	Not present
- Cell for measurement	
- 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	FALSE
reporting indicator	
- 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. (Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	
- 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	Non 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	infinity
- Amount of reporting	12000
- Reporting interval	
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. (Current CFN + (256 – TTI/10msec))mod 256
- TGPS reconfiguration CFN	
- 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 ~~and step 9~~)

[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
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

OR

Information Element	Value/remark
<u>Measurement identity</u>	<u>Check to see if set to 15</u>
<u>Measured Results</u>	
<u>- CHOICE measurement</u>	<u>Check to see if set to "Inter-RAT measured results list"</u>
<u>- Inter-RAT measured result list</u>	
<u>- CHOICE system</u>	<u>GSM</u>
<u>- Measured GSM cells</u>	
<u>- GSM carrier RSSI</u>	<u>Check to see if present</u>
<u>CHOICE BSIC</u>	<u>Verified BSIC</u>
<u>- Inter-RAT cell id</u>	<u>Check that is set to "0"</u>
<u>- Observed time difference to GSM cell</u>	<u>Check that not present</u>
<u>- GSM carrier RSSI</u>	<u>Check that measurement result is reasonable</u>
<u>CHOICE BSIC</u>	<u>Verified BSIC</u>
<u>- Inter-RAT cell id</u>	<u>Check that is set to "1"</u>
<u>- Observed time difference to GSM cell</u>	<u>Check that not present</u>
<u>Measured results on RACH</u>	<u>Check that not present</u>
<u>Additional Measured results</u>	<u>Check that not present</u>
<u>Event results</u>	<u>Check that not present</u>

MEASUREMENT REPORT, if the UE does not require compressed mode (refer ICS/IXIT) (Step 8)

Information Element	Value/remark
<u>Measurement identity</u>	<u>Check to see if set to 15</u>
<u>Measured Results</u>	
<u>- CHOICE measurement</u>	<u>Check to see if set to "Inter-RAT measured results list"</u>
<u>- Inter-RAT measured result list</u>	
<u>- CHOICE system</u>	<u>GSM</u>
<u>- Measured GSM cells</u>	
<u>- GSM carrier RSSI</u>	<u>Check to see if present</u>
<u>CHOICE BSIC</u>	<u>Verified BSIC</u>
<u>- Inter-RAT cell id</u>	<u>Check that is set to "0"</u>
<u>- Observed time difference to GSM cell</u>	<u>Check that not present</u>
<u>- GSM carrier RSSI</u>	<u>Check that measurement result is reasonable</u>
<u>CHOICE BSIC</u>	<u>Verified BSIC</u>
<u>- Inter-RAT cell id</u>	<u>Check that is set to "1"</u>
<u>- Observed time difference to GSM cell</u>	<u>Check that not present</u>
<u>Measured results on RACH</u>	<u>Check that not present</u>
<u>Additional Measured results</u>	<u>Check that not present</u>
<u>Event results</u>	<u>Check that not present</u>

MEASUREMENT REPORT (Step 9)

Information Element	Value/remark
<u>Measurement identity</u>	<u>Check to see if set to 15</u>
<u>Measured Results</u>	
<u>- CHOICE measurement</u>	<u>Check to see if set to "Inter-RAT measured results list"</u>
<u>- Inter-RAT measured result list</u>	
<u>- CHOICE system</u>	<u>GSM</u>

- Measured GSM cells	Check to see if present
- GSM carrier RSSI	Verified BSIC
CHOICE BSIC	Check that is set to "0"
- Inter-RAT cell id	Check that not present
- Observed time difference to GSM cell	Check that measurement result is reasonable
- GSM carrier RSSI	Verified BSIC
CHOICE BSIC	Check that is set to "1"
- Inter-RAT cell id	Check that not present
- 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.

<< END OF MODIFIED SECTION >>

<< START OF MODIFIED SECTION >>

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.

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 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 ~~4216~~ 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 ~~4216~~ 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 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
<p>Downlink information common for all radio links</p> <ul style="list-style-type: none"> - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence <p>configuration parameters</p> <ul style="list-style-type: none"> - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP <p>CHOICE UL/DL Mode</p> <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method <ul style="list-style-type: none"> - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence <p>configuration parameters</p> <ul style="list-style-type: none"> - TGMP - TGPRC - TGSN - TGL1 - TGL2 - TGD - TGPL1 - TGPL2 - RPP - ITP <p>CHOICE UL/DL Mode</p> <ul style="list-style-type: none"> - Downlink compressed mode method - Uplink compressed mode method <ul style="list-style-type: none"> - Downlink frame type - DeltaSIR1 - DeltaSIRAfter1 - DeltaSIR2 - DeltaSIR2After2 - N identify abort - T Reconfirm abort - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence <p>configuration parameters</p> <ul style="list-style-type: none"> - TGMP - TGPRC 	<p>1</p> <p>Deactivate</p> <p>Not present</p> <p>GSM Carrier RSSI Measurement</p> <p>Infinity</p> <p>4</p> <p>7</p> <p>Not present</p> <p>undefined</p> <p>16</p> <p>Not present</p> <p>Mode 0</p> <p>Mode 0</p> <p>UL&DL or UL-only or DL-only (depends on UE's Measurement capability)</p> <p>SF/2</p> <p>SF/2</p> <p>A</p> <p>1.0</p> <p>0.5</p> <p>Not Present</p> <p>Not Present</p> <p>Not Present</p> <p>Not Present</p> <p>2</p> <p>Deactivate</p> <p>Not present</p> <p>GSM BSIC identification</p> <p>Infinity</p> <p>8</p> <p>14</p> <p>Not present</p> <p>undefined</p> <p>24</p> <p>Not present</p> <p>Mode 0</p> <p>Mode 0</p> <p>UL&DL or UL-only or DL-only (depends on UE's Measurement capability)</p> <p>SF/2</p> <p>SF/2</p> <p>A</p> <p>1.0</p> <p>0.5</p> <p>Not Present</p> <p>Not Present</p> <p>66</p> <p>Not Present</p> <p>3</p> <p>Deactivate</p> <p>Not present</p> <p>GSM BSIC re-confirmation</p> <p>Infinity</p>

- 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	4.8 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event triggered
- Periodic Reporting / Event Trigger Reporting Mode	Not Present
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=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	37
- 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	717
- 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	7 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

<ul style="list-style-type: none"> - GSM carrier RSSI reporting indicator CHOICE report criteria - Inter-RAT measurements reporting criteria - Parameters required for each event (1 to <maxMeasEvent>) - Inter-RAT event identity - Threshold own system - W - Threshold other system - Hysteresis - Time to Trigger - Reporting cell status - Maximum number of reported cells Physical channel information elements - DPCH compressed mode status info - TGPS reconfiguration CFN - Transmission gap pattern sequence (1 to <MaxTGPS>) - TGPSI - TGPS status flag - TGCFN - TGPSI - TGPS status flag - TGCFN - TGPSI - TGPS status flag - TGCFN 	<p>TRUE</p> <p><MaxMeasEvent>=1</p> <p>3c</p> <p>Not included</p> <p>Not included</p> <p>-74</p> <p>5</p> <p>100 ms</p> <p>Report cells within active set or within virtual active set or of the other RAT</p> <p>2</p> <p>(Current CFN + (250 – TTI/10msec)) mod 256</p> <p><MaxTGPS>=33f35s</p> <p>1</p> <p>Activate</p> <p>(Current CFN + (256 – 11 – TTI/10msec)) mod 256</p> <p>2</p> <p>Activate</p> <p>(Current CFN + (256 – 7 – TTI/10msec)) mod 256</p> <p>3</p> <p>Activate</p> <p>(Current CFN + (256 – TTI/10msec)) mod 256</p>
---	---

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 id 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.

<< END OF MODIFIED SECTION >>

CHANGE REQUEST

⌘ **TS 34.123-1 CR 828** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 case description for test case 8.1.6.4		
Source:	⌘ CETECOM GmbH		
Work item code:	⌘ TEI	Date:	⌘ 28/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Inconsistency between the Test procedure description and Expected sequence. In Test procedure description, SS requests operator to deactivate the established PDP context, whereas in Expected Sequence, operator is asked by SS to initiate an outgoing call. Following the test purpose, UL Direct Transfer message retransmission is tested as stated in Step 5, therefore initiation of an outgoing call in Step 1 is not needed in this case and is proposed to be removed.
Summary of change:	⌘ Removed "SS requests operator to make an outgoing call" as noted in step 1. Added PDP deactivation initiation in step 1. Minor editorial correction in step 5.
Consequences if not approved:	⌘ Expected sequence is in contradiction to Test procedure description.

Clauses affected:	⌘ 8.1.6.4						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	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.

8.1.6.4 UPLINK Direct Transfer (RLC re-establishment)

8.1.6.4.1 Definition

8.1.6.4.2 Conformance requirement

If signalling radio bearer RB n (where n equals to 3 or 4) was used when transmitting the UPLINK DIRECT TRANSFER message and a re-establishment of RLC on same signalling radio bearer RB n occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

- 1> retransmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3.

Reference

3GPP TS 25.331 clause 8.1.10.2a.

8.1.6.4.3 Test purpose

To confirm that the UE transmits a second UPLINK DIRECT TRANSFER message after the re-establishment of RLC on RB3 which occurs before the successful delivery of the first UPLINK DIRECT TRANSFER message.

8.1.6.4.4 Method of test

Initial Condition

System Simulator: 1 cell – Cell 1 is active.

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

Specific Message Contents

For RRC CONNECTION SETUP message to be transmitted in the initial setup, use the default message given in TS 34.108 subclause 9 with the following exceptions:.

RRC CONNECTION SETUP

Information Element	Value/Remarks
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
- 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	128
- Timer_RST	500
- Max_RST	1
- Polling info	
- Timer_poll_prohibit	1000
- Timer_poll	1000
- 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	2 RBMuxOptions
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	3
- CHOICE RLC size list	Configured
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10
- DL DSCH Transport channel identity	Not Present
- Logical channel identity	3
- RLC logical channel mapping indicator	Not Present
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	3
- CHOICE RLC size list	Explicit List
- RLC size index	According to TS34.108 clause 6.10.2.4.1.3 for FDD, 6.10.3.4.1.3 for TDD 3.84 Mcps option or 6.11.5.4.1.3 for TDD 1.28 Mcps option (standalone 13.6 kbps signalling radio bearer)
- MAC logical channel priority	3
- Downlink RLC logical channel info	
- Number of 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	3

Test Procedure

UE is in CELL_DCH. SS set the RLC entity for SRB3 to stop. SS requests operator to deactivate the established PDP context. Then the UE shall transmit an UPLINK DIRECT TRANSFER message on the uplink DCCH. SS does not acknowledge the AM PDUs carrying UPLINK DIRECT TRANSFER message. The SS then sends a UTRAN MOBILITY INFORMATION message on SRB1 requesting the UE to do a SRNS relocation, 5s after asking the operator to deactivate the established PDP context. The UE shall send a UTRAN MOBILITY INFORMATION CONFIRM message on SRB2. The SS set the RLC entity for SRB3 to continue upon receiving

UTRAN MOBILITY INFORMATION CONFIRM message. Then UE shall retransmit an UPLINK DIRECT TRANSFER message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS set the RLC entity for SRB3 to stop. SS requests operator to make an outgoing call. SS requests the operator to initiate a PDP context deactivation.
2		→	UPLINK DIRECT TRANSFER	.
3		←	UTRAN MOBILITY INFORMATION	
4		→	UTRAN MOBILITY INFORMATION CONFIRM	UE sends this message on uplink DCCH on AM RLC. After the reception, SS configures RB 3 to continue.
5		→	UPLINK DIRECT TRANSFER	DEACTIVATE PDP CONTEXT REQUEST message is embedded in UPLINK DIRECT TRANSFER message.

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Ciphering mode info <ul style="list-style-type: none"> - Ciphering mode command - Ciphering algorithm - Ciphering activation time for DPCH - Radio bearer downlink ciphering activation time info - Radio bearer activation time - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number - RB identity - RLC sequence number 	This presence of this IE is dependent on Ixit statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted. Start/restart UEA0 or UEA1. The indicated algorithm must be one of the algorithms supported by the UE as indicated in the IE "security capability" in the RRC CONNECTION SETUP COMPLETE message. $(256 + CFN - (CFN \text{ MOD } 8 + 8)) \text{ MOD } 256$, this IE is set to "Not present" if only PS RABs are established during the initial setup procedure. 1 Current RLC SN + 2 2 Current RLC SN + 2 3 Current RLC SN + 2 4 Current RLC SN + 2 20, this IE is set to "Not present" if PS RAB is not established during the initial setup procedure. Current RLC SN + 2
Integrity protection mode info <ul style="list-style-type: none"> - 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. The first/ leftmost bit of the bit string contains the most significant bit of the FRESH.
New U-RNTI <ul style="list-style-type: none"> - SRNC identity - S-RNTI 	0000 0000 0010B 0000 0000 0000 0000 0001B
Downlink counter synchronisation info <ul style="list-style-type: none"> - RB with PDCP information list 	Not present

UTRAN MOBILITY INFORMATION CONFIRM (Step 4)

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 Not checked.

UPLINK DIRECT TRANSFER (Step 5)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - RRC Message sequence number CN domain identity NAS message Measured results on RACH	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. This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value. PS domain DEACTIVATE PDP CONTEXT REQUEST Not checked

8.1.6.4.5 Test requirement

After step 3, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message using uplink DCCH on AM RLC and then retransmit UPLINK DIRECT TRANSFER message on the uplink DCCH.

CHANGE REQUEST

⌘ 34.123-1 CR 831 ⌘ rev - ⌘ Current version: 5.7.1 ⌘

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 34.123-1 Rel-5: Corrections to MM test cases to include GMM procedures
Source:	⌘ Rohde & Schwarz, MCC 160, Anite
Work item code:	⌘ TEI Date: ⌘ 12/05/2004
Category:	⌘ F Release: ⌘ Rel-5
Use <u>one</u> of the following categories:	
Use <u>one</u> of the following releases:	
F (correction)	2 (GSM Phase 2)
A (corresponds to a correction in an earlier release)	R96 (Release 1996)
B (addition of feature),	R97 (Release 1997)
C (functional modification of feature)	R98 (Release 1998)
D (editorial modification)	R99 (Release 1999)
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)
	Rel-5 (Release 5)
	Rel-6 (Release 6)

Reason for change: ⌘	The MM test case prose was established without consideration of the GMM procedures. As it has been requested and agreed to make UEs enter the GMM state corresponding to the MM state which UEs are forced to at the beginning of the MM test cases, it became necessary to update to MM prose specifications accordingly.
Summary of change: ⌘	All MM test cases shall be performed either in CS mode or in CS and PS mode. If the test cases are to be executed in CS and PS mode the System Simulator behaviour in PS mode shall be as close as possible and meaningful to the behaviour of a real network. This means that test cases which initially force the UE into the MM IDLE UPDATED state shall force the UE in parallel to enter the GMM REGISTERED state. Test cases which initially reject a UE's attempt to get CS registered, shall as well reject a UE's attempt to get PS registered. The following consequences arise from supporting this type of behaviour: <ol style="list-style-type: none">1) GMM ATTACH REQUEST messages received in the preamble shall be accepted and bring the UE into the GMM REGISTERED state2) subsequent GMM ATTACH REQUEST messages received in the test body shall be rejected with Cause value = 7 'GPRS services not allowed'3) within the test body GMM ROUTING AREA UPDATE REQUEST messages may be received and shall be acknowledged resp. rejected the same way as the corresponding LOCATION AREA UPDATING REQUEST messages4) GMM DETACH REQUEST messages received within the test body shall be acknowledged

5) if, at the beginning of a test case (i.e. at the start of a test body), a UE attempts to register in CS mode, and this attempt is rejected, the parallel attempt to register in PS mode shall be rejected with the same cause as used to reject the CS registration

In PS mode the UE may attach automatically or not. This shall be accounted for by the System Simulator.

Changes to T1-040722

- Merged and re-worded paragraph 5 of section 9 from Anite CR T1-040670
- Removed PS related comment in 9.4.2.1.4, Expected Sequence, step 29
- Corrected numbering of GMM procedures at the start of section 9
- Made GMM procedures optional: reworded PS related comments in Expected Sequences replacing "will" → "can", "shall" → "should"
- Corrected typos on CR cover sheet

Consequences if not approved: ☼ Conformant UE may fail the test case.

Clauses affected: ☼ Approved test cases:
 tc_9_1, tc_9_2_2, tc_9_4_1, tc_9_4_2_1, tc_9_4_2_2_1, tc_9_4_2_2_2, tc_9_4_2_3, tc_9_4_2_4_1, tc_9_4_2_5, tc_9_4_4, tc_9_4_5_3, tc_9_4_8

Non-approved test cases:
 tc_9_2_5, tc_9_3_2, tc_9_4_2_4_2, tc_9_4_2_4_3, tc_9_4_2_4_4, tc_9_4_2_4_5, tc_9_4_3_2, tc_9_4_3_3, tc_9_4_3_4, tc_9_4_3_5, tc_9_4_5_4_1, tc_9_4_5_4_2, tc_9_4_5_4_3, tc_9_4_7, tc_9_5_7_1

Other specs affected:	☼	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	☼	34.123-3
	Y	N							
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications							
<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications							

Other comments: ☼ Affects R99, Rel-4 and Rel-5.

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9 Elementary procedures of mobility management

The tests are based on TS 24.008.

In this clause, when the expected sequence require that "a mobile originated CM connection is attempted", it shall be for a service other than emergency call.

In this clause, a initial CM message is either a SETUP message, a REGISTER message or a CP-DATA message (in that case the acknowledged mode of operation on SAPI 3 will have be established and this message will be sent on SAPI 3).

All tests in this clause shall only be performed in Network Mode of Operation II, unless specifically specified otherwise in individual sub-clauses.

All test cases in this clause shall be performed either in CS mode or in CS and PS mode.

If the test cases are to be executed in CS and PS mode the System Simulator behaviour in PS mode ~~shall~~ should be as close as possible and meaningful to reflect the behaviour of a real network. This means that test cases which initially force the UE into the MM IDLE UPDATED state ~~shall~~ should force the UE in parallel to enter the GMM REGISTERED state. Test cases which initially reject a UE's attempt to get CS registered, ~~shall~~ should as well reject a UE's attempt to get PS registered.

The following consequences arise from supporting this type of behaviour:

1. GMM ATTACH REQUEST messages received in the preamble ~~shall~~ should be accepted and bring the UE into the GMM REGISTERED state
2. subsequent GMM ATTACH REQUEST messages received in the test body should ~~shall~~ be rejected with Cause value = 7 'GPRS services not allowed'
3. within the test body GMM ROUTING AREA UPDATE REQUEST messages may be received and ~~shall~~ should be acknowledged resp. rejected the same way as the corresponding LOCATION AREA UPDATING REQUEST messages
4. GMM DETACH REQUEST messages received within the test body ~~shall~~ should be acknowledged
5. -if, at the beginning of a test case, a UE attempts to register in CS mode, and this attempt is rejected, the parallel attempt to register in PS mode ~~shall~~ should be rejected with the same cause as used to reject the CS registration

In PS mode the UE may attach automatically or not. This ~~shall~~ should be accounted for by the System Simulator.

Any GMM signalling shown in the Expected Sequence Tables in the following sections is purely informative and shall not be considered to be part of the test purpose or test requirement.

9.1 TMSI reallocation

The intention of the TMSI Reallocation procedure is to assign a new temporary identity for the UE. If the message is not understood by the UE, the network could not establish a link to the UE. As this is a common MM procedure, it can be initiated at any time.

9.1.1 Definition

9.1.2 Conformance requirement

- 1) A UE shall acknowledge a new TMSI when explicitly allocated during a location updating procedure or an incoming call.

- 2) The TMSI shall be updated on the USIM when the UE is correctly deactivated in accordance with the manufacturer's instructions.
- 3) A UE shall answer paging with this TMSI and includes it in the PAGING RESPONSE message.

Reference(s)

TS 24.008 clause 4.3.1.

9.1.3 Test purpose

To verify that the UE is able to receive and acknowledge a new TMSI by means of an explicit TMSI reallocation procedure.

To verify that the UE has stored the TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in clause 9.4.1.

9.1.4 Method of test

Initial conditions

- System Simulator:
 - two cells A and B, belonging to different location areas a and b, default parameters.
- User Equipment:
 - the UE has valid TMSI (= TMSI1), CKSN, CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

Switch off button Yes/No.

Way to bring the UE into service.

Test Procedure

The UE is paged in cell B and the security mode is established. An explicit TMSI reallocation procedure is performed. The RRC CONNECTION is released. The UE is switched off and then its power supply is interrupted for 10 s. The power supply is resumed and then the UE is switched on and allowed sufficient time to guarantee that the UE is in service (listening to its paging subchannel). The system simulator then checks, by paging, whether the UE has stored the received TMSI.

The UE is made to select cell A. A normal location updating procedure is performed in cell A. An explicit TMSI reallocation procedure is performed and then the location updating procedure is accepted by the SS. The system simulator checks, by paging, whether the UE has stored the allocated TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
1	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI1. Establishment Cause: Terminating Conversation Call. "Mobile identity" =TMSI1
2	→		PAGING RESPONSE	
2a	←		AUTHENTICATION REQUEST	
2b	→		AUTHENTICATION RESPONSE	
3	SS			The SS starts integrity protection.
4			Void	
5	←		TMSI REALLOCATION COMMAND	"Mobile identity" = new TMSI (TMSI2) different from TMSI 1.
6	→		TMSI REALLOCATION COMPLETE	
7	SS			The SS releases the RRC connection.
8			Void	
9	UE			If possible (see ICS), the UE is switched off. A Detach Request will can be received in PS mode.
9a	UE			The power supply is interrupted for 10 s.
10	UE			The UE is switched on. The subsequent GMM attach shall should be rejected if received in the PS mode.
11	SS			The SS waits for 5 seconds to guarantee that the UE is in service (listening to its paging subchannel).
12	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI2. Establishment Cause: Terminating Conversation Call.
13	→		PAGING RESPONSE	"Mobile identity" =TMSI2.
14	SS			The SS releases the RRC connection. The following messages are sent and shall be received on cell A
15			Void	
16	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)
17	SS		RRC CONNECTION REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18			Void	
19			Void	
20	→		LOCATION UPDATING REQUEST	location updating type = normal, "ciphering key sequence number" = CKSN, LAI = b, "mobile identity" = TMSI2.
20a	←		AUTHENTICATION REQUEST	
20b	→		AUTHENTICATION RESPONSE	
20c	SS			The SS starts integrity protection.
20d			Void	
21	←		TMSI REALLOCATION COMMAND	TMSI = TMSI1.
22	→		TMSI REALLOCATION COMPLETE	
23	←		LOCATION UPDATING ACCEPT	This message does not contain the optional Mobile Identity field.
24	SS			The SS releases the RRC connection.
25			Void	
25a				The SS waits for 5 seconds to allow the UE to become "idle updated" on cell A.
26	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI1). "Establishment cause": Terminating Conversational Call.
27	→		PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI1).
28	SS			The SS releases the RRC connection.
29			Void	
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.

9.1.5 Test requirement

At step 5 the UE shall receive and acknowledge a new TMSI (TMSI2) and has stored that in the USIM, and the UE is switched off and on after step 9 and 10.

At step 13 the UE shall transmit a new TMSI2 and includes it in the PAGING RESPONSE message.

At step 27 the UE shall answer paging with this TMSI1 and includes it in the PAGING RESPONSE message.

9.2 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.

The SS shall be able to handle vectors of AUTN, RAND, CK, IK, AUTS and XRES in a similar way as the MSC/BSS entities. The SS and test USIM shall incorporate a test algorithm for generating RES and CK, IK from RAND, AUTN and IK which operates as described in TS 34.108 clause 8.1.2.

9.2.1 Authentication accepted

9.2.1.1 Definition

9.2.1.2 Conformance requirement

- 1) A UE shall correctly respond to an AUTHENTICATION REQUEST message by sending an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the one produced by the authentication algorithm in the network.
- 2) A UE shall indicate in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

Reference(s)

TS 24.008 clauses 4.3.2.2 and 4.3.2.4.

9.2.1.3 Test purpose

- 1) To check that a UE correctly responds to an AUTHENTICATION REQUEST message by sending an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the one produced by the authentication algorithm in the network.
- 2) To check that a UE indicates in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

9.2.1.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has valid TMSI, CKSN (CKSN1), CK, IK. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

None.

Test Procedure

The UE is paged. After the UE has sent a PAGING RESPONSE message to the SS, the SS initiates an authentication procedure and checks the value RES sent by the UE in the AUTHENTICATION RESPONSE message. The RRC CONNECTION is released. The UE is paged and the SS checks the value of the ciphering key sequence number sent by the UE in the PAGING RESPONSE message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2
2	→		PAGING RESPONSE	Establishment Cause: Terminating Conversational Call. CKSN = CKSN1
3	←		AUTHENTICATION REQUEST	The SS initiates authentication with CKSN2 different from CKSN1.
4	→		AUTHENTICATION RESPONSE	"Auth. parameter RES" IE shall be bit exact with the value as produced by the authentication algorithm.
5		SS	Void	The SS releases the RRC connection.
6				
6a				The SS waits for 5 seconds to guarantee that the UE is in service.
7			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2
8	→		PAGING RESPONSE	Establishment Cause: Terminating Conversational Call. "Ciphering key sequence number" shall be the same as the value that was sent in the last AUTHENTICATION REQUEST message (= CKSN2).
9		SS	Void	The SS releases the RRC connection.
10			Void	

Specific message contents

None.

9.2.1.5 Test requirement

- 1) At step 4 the UE shall send an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the XRES calculated by the SS.
- 2) At step 8 the UE shall indicate in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

9.2.2 Authentication rejected by the network

9.2.2.1 Definition

9.2.2.2 Conformance requirement

- 1) After reception of an AUTHENTICATION REJECT message the UE shall:
 - 1.1 not perform normal location updating;
 - 1.2 not perform periodic location updating;
 - 1.3 not respond to paging with TMSI;
 - 1.4 reject any request from CM entity for MM connection except for emergency call;

1.5 not perform IMSI detach if deactivated.

- 2) After reception of an AUTHENTICATION REJECT message the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) After reception of an AUTHENTICATION REJECT message the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.3.2.5.

9.2.2.3 Test purpose

- 1) To check that ,after reception of an AUTHENTICATION REJECT message, the UE:
 - 1.1 does not perform normal location updating;
 - 1.2 does not perform periodic location updating;
 - 1.3 does not respond to paging with TMSI;
 - 1.4 rejects any request from CM entity for MM connection except for emergency call;
 - 1.5 does not perform IMSI detach if deactivated.
- 2) To check that, after reception of an AUTHENTICATION REJECT message the UE, if it supports speech, accepts a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and includes an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) To check that, after reception of an AUTHENTICATION REJECT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

9.2.2.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas a and b;
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has valid TMSI, CKSN (CKSN2) , CK and IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test procedure

The SS rejects an authentication. The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does

not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if USIM detachment is performed, switch off is performed, or the power is removed, depending on the UE (see ICS/IXIT).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2
2	→		PAGING RESPONSE	Establishment Cause: Terminating Conversational Call.. "Cipherring key sequence number" shall be the same as the value that was sent in the last AUTHENTICATION REQUEST message (= CKSN2).
3	←		AUTHENTICATION REQUEST	
4	→		AUTHENTICATION RESPONSE	
5	←		AUTHENTICATION REJECT	
6	SS			The SS releases the RRC connection.
7			Void	
8	←		PAGING TYPE 1	The UE is paged in cell B. "UE identity " IE contains TMSI. Paging Cause: Terminating Conversational Call.
9	UE			The UE shall ignore this message. This is verified during 3 s.
10	SS			The SS waits for at least for 15 s.
11	UE			A MO CM connection is attempted.
12	UE			The UE shall not initiate an RRC connection establishment on cell A or cell B. This is checked during 3 s.
13	UE			If the UE supports speech (see ICS), an emergency call is attempted.
14	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency call".
15			Void	
16			Void	
17	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. "Mobile identity": type of identity is set to IMEI.
18	←		CM SERVICE ACCEPT	
19	→		EMERGENCY SETUP	
20	←		RELEASE COMPLETE	"Cause" = unassigned number.
21	SS			The SS releases the RRC connection.
22			Void	
The following messages are sent and shall be received on cell A.				
23	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)
24	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 29). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
25	SS			The SS waits at least 7 minutes for a possible periodic updating. If PS mode: a routing area updating procedure shall should be performed.
26	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
27	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. A Detach Request will can be received in PS mode.
28	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
29	UE			Depending on what has been performed in step 26 the UE is brought back to operation. The subsequent GMM attach shall should be rejected if received in the PS mode.
30	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
31			Void	
32			Void	

Step	Direction		Message	Comments
	UE	SS		
33		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
34		←	AUTHENTICATION REQUEST	"CKSN" = CKSN1. "Mobile Identity" = TMSI. The SS releases the RRC connection.
35		→	AUTHENTICATION RESPONSE	
36		←	LOCATION UPDATING ACCEPT	
37		→	TMSI REALLOCATION COMPLETE	
38		SS	Void	
39			Void	
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.

9.2.2.5 Test requirement

- 1)
 - 1.1 At step 24 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.
 - 1.2 At step 25 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.
 - 1.3 At step 9 the UE shall not respond to paging.
 - 1.4 At step 12 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.
 - 1.5 At step 28 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.
- 2) At step 14 the UE shall send a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call"; and at step 17 the UE shall send a CM SERVICE REQUEST message with the "CM service type" set to "Emergency call establishment".
- 3) At step 33 the UE shall perform location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

9.2.3 Authentication rejected by the UE (MAC code failure)

9.2.3.1 Definition

Following a UMTS authentication challenge, the UE may reject the core network, on the grounds of an incorrect AUTN parameter (see TS 33.102).

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, it shall send an AUTHENTICATION FAILURE message to the network, with the reject cause 'MAC failure'.

9.2.3.2 Conformance requirement

- 1) The UE shall respond to an AUTHENTICATION REQUEST message, with a MAC code failure in the AUTN parameter, by sending an AUTHENTICATION FAILURE message with the reject cause 'MAC failure' and start timer T3214. When an AUTHENTICATION REQUEST message containing an invalid MAC has been received by the UE from the network, the UE shall stop any of the retransmission timers that are running (i.e. T3210, T3220 or T3230).
- 2) Upon receipt of an AUTHENTICATION FAILURE message from the UE, with reject cause 'MAC failure' the network may initiate the identification procedure. Upon reception of an IDENTITY REQUEST message, the UE shall identify itself by sending an IDENTITY RESPONSE message including the IMSI to the network. The

network may then check that the TMSI originally used in the authentication challenge corresponded to the correct IMSI.

- 3) If the TMSI/IMSI mapping in the network was incorrect, the network should respond by sending a new AUTHENTICATION REQUEST message to the UE. Upon receiving the second AUTHENTICATION REQUEST message from the network, the UE shall stop the timer T3214, if running, and then process the challenge information as normal. Upon successfully validating the network (an AUTHENTICATION REQUEST that contains a valid MAC in the AUTN parameter is received), the UE shall send the AUTHENTICATION RESPONSE message to the network and shall start any retransmission timers (e.g. T3210, T3220 or T3230), if they were running and stopped when the UE received the first AUTHENTICATION REQUEST message containing an incorrect MAC.

Reference(s)

TS 24.008 clauses 4.3.2.5.1 and 4.3.2.6 (c)

9.2.3.3 Test purpose

- 1) To check that a UE shall correctly respond to an AUTHENTICATION REQUEST message, with a MAC code failure in the AUTN parameter, by sending an AUTHENTICATION FAILURE message with the reject cause 'MAC failure'.
- 2) To check that upon reception of an IDENTITY REQUEST message, requesting for IMSI, the UE identifies itself by sending an IDENTITY RESPONSE message including the IMSI to the network.
- 3) To check that upon receiving the second AUTHENTICATION REQUEST message from the network, the UE shall stop the timer T3214, if running, and then process the challenge information as normal. To check that upon successfully validating the network (an AUTHENTICATION REQUEST that contains a valid MAC is received), the UE sends the AUTHENTICATION RESPONSE message to the network.

9.2.3.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has valid TMSI, CKSN (CKSN1), CK, IK. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

None.

Test procedure

The UE rejects an authentication. The AUTHENTICATION FAILURE is sent by UE. Upon receipt of the AUTHENTICATION FAILURE message the SS initiates identification procedure. The UE responds to the SS by sending IDENTITY RESPONSE message. The SS sends AUTHENTICATION REQUEST message with correct AUTN parameter.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2
2		→	PAGING RESPONSE	Establishment Cause: Terminating Conversational Call. CKSN = CKSN1
3		←	AUTHENTICATION REQUEST	With AUTN parameter having a MAC value different from what is calculated in 34.108 clause 8.1.2.1 step 4.
4		→	AUTHENTICATION FAILURE	With reject cause "MAC failure"
5		←	IDENTITY REQUEST	With identity type IMSI
6		→	IDENTITY RESPONSE	With IMSI in Mobile Identity IE
7		←	AUTHENTICATION REQUEST	With the AUTN parameter having a valid MAC code, see 34.108 clause 8.1.2.1 step 4.
8		→	AUTHENTICATION RESPONSE	Authentication Response Parameter IE (RES) shall be bit exact with the value as produced by the authentication algorithm.
9		←	RRC CONNECTION RELEASE	
10		→	RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.2.3.5 Test requirement

- 1) At step 4 the UE shall send AUTHENTICATION FAILURE message with reject cause set to "MAC failure".
- 2) At step 6 the UE shall send an IDENTITY RESPONSE message including the IMSI.
- 3) At step 8 the UE shall send an AUTHENTICATION RESPONSE message.

9.2.4 Authentication rejected by the UE (SQN failure)

9.2.4.1 Definition

Following a UMTS authentication challenge, the UE may reject the core network, on the grounds of an incorrect AUTN parameter (see TS 33.102).

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, it shall send an AUTHENTICATION FAILURE message to the network, with the reject cause 'Synch failure' and a re-synchronisation token AUTS provided by the USIM (see TS 33.102).

9.2.4.2 Conformance requirement

- 1) The UE shall respond to an AUTHENTICATION REQUEST message, with an SQN failure in the AUTN parameter, by sending an AUTHENTICATION FAILURE message with the reject cause 'Synch failure' and start the timer T3216 and stop any of the retransmission timers that are running (i.e. T3210, T3220 or T3230). Upon receipt of an AUTHENTICATION FAILURE message from the UE with the reject cause 'synch failure,' the network shall use the returned AUTS parameter from the authentication failure parameter IE in the AUTHENTICATION FAILURE message, to re-synchronise.
- 2) Upon successfully validating the network (a second AUTHENTICATION REQUEST is received which contains a valid SQN in the AUTN parameter) while T3216 is running, the UE shall send the AUTHENTICATION RESPONSE message to the network and shall start any retransmission timers (e.g. T3210, T3220 or T3230), if they were running and stopped when the UE received the first AUTHENTICATION REQUEST message containing an invalid SQN.

Reference(s)

TS 24.008 clause 4.3.2.5.1, 4.3.2.6 (d)

9.2.4.3 Test purpose

- 1) To check that a UE shall correctly respond to an AUTHENTICATION REQUEST message, with an SQN failure in the AUTN parameter, by sending an AUTHENTICATION FAILURE message with the reject cause 'Synch failure'.
- 2) To check that upon successfully validating the network (a second AUTHENTICATION REQUEST is received which contains a valid SQN) while T3216 is running, the UE shall send the AUTHENTICATION RESPONSE message to the network.

9.2.4.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has valid TMSI, CKSN (CKSN1), CK, IK. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

None.

Test procedure

The SS sends an AUTHENTICATION REQUEST having an invalid SQN code (i.e. uses the predefined AMF_{RESYNCH} value to trigger the SQN re-synchronisation procedure, see TS 34.108 clause 8.1.2.2) to the UE. The SS verifies that the UE rejects the authentication.

The SS sends a second AUTHENTICATION REQUEST with a valid SQN code (i.e. uses an AMF value different from AMF_{RESYNCH} value, see TS 34.108 clause 8.1.2.2). The SS checks that the UE accepts the authentication request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	CKSN = CKSN1
3	←		AUTHENTICATION REQUEST	with the AMF information field set to AMF _{RESYNCH} value to trigger SQN re-synchronisation procedure in test USIM, see TS 34.108 clause 8.1.2.2.
4	→		AUTHENTICATION FAILURE	including the AUTS parameter and with the reject cause set to 'Synch failure'
5	←		AUTHENTICATION REQUEST	with the AMF information field set to value different from AMF _{RESYNCH} value to cause test USIM to treat SQN value as valid, see TS 34.108 clause 8.1.2.2.
6	→		AUTHENTICATION RESPONSE	"Auth. parameter RES" IE shall be bit exact with the value as produced by the authentication algorithm.
7	←		RRC CONNECTION RELEASE	
8	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.2.4.5 Test requirement

- 1) At step 4 the UE shall reject an authentication and the AUTHENTICATION FAILURE is sent to SS with reject cause "Synch failure".
- 2) At step 6 the UE shall send an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the XRES calculated by SS.

9.2.5 Authentication rejected by the UE / fraudulent network

9.2.5.1 Definition

9.2.5.2 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 FAILURE message with the reject cause 'MAC failure' the timer T3214 expires;
 - Upon receipt of the second AUTHENTICATION REQUEST while T3214 is running and the MAC value cannot be resolved.

When it has been deemed by the UE that the source of the authentication challenge is not genuine (i.e. authentication not accepted by the UE), the UE shall behave as described in 3GPP TS 24.008 clause 4.3.2.6.1.
2. In addition to the cases specified in 3GPP TS 24.008 subclause 4.3.2.6, 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 T3214 or T3216 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(s)

3GPP TS 24.008 clauses 4.3.2.6 (c) and 4.3.2.6.1.

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 occur:
 - after sending the AUTHENTICATION FAILURE message with the reject cause "MAC failure" the timer T3214 expires;
 - the UE 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 UE, while the timer T3214 or T3216 started after the previous authentication failure is running.

When it has been deemed by the UE that the source of the authentication challenge is not genuine (i.e. authentication not accepted by the UE), the UE shall behave as described in 3GPP TS 24.008 subclause 4.3.2.6.1.

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(s)

3GPP TS 24.008 clauses 4.3.2.6 (c) and 4.3.2.6.1.

9.2.5.3 Test purpose

R99 and REL-4:

To test UE treating a cell as barred:

1. when the UE receives the second or third AUTHENTICATION REQUEST message with invalid MAC value during the T3214 is running.
2. when the timer T3214 has expired.

REL-5 and later releases:

To test UE treating a cell as barred:

1. when the UE receives the third AUTHENTICATION REQUEST message with invalid MAC value during the T3214 is running.
2. when the timer T3214 has expired.

9.2.5.4 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 statement(s)

None.

Test procedure

A location updating procedure is initiated in cell B. The SS sends an AUTHENTICATION REQUEST message with invalid MAC value and the UE responds with an AUTHENTICATION FAILURE message. The SS resends an AUTHENTICATION REQUEST message with invalid MAC value.

For R99 and REL-4: The SS waits 30 seconds. If the UE sends an AUTHENTICATION FAILURE message during this time then 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 B.

For REL-5 and later release: The SS repeats a third time the authentication procedure, again with invalid MAC value in its AUTHENTICATION REQUEST message. The UE moves into idle mode and do not make any access attempt on cell B.

It is checked that the UE shall not attempt to access the network in cell B.

A location updating procedure is initiated in cell A. The SS sends an AUTHENTICATION REQUEST message with invalid MAC value and the UE responds with an AUTHENTICATION FAILURE message. The SS waits T3214 expiry.

It is checked that the UE shall not attempt to access the network in cell A.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages shall be sent and received on Cell B. 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) 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 shall should be performed. with AUTN parameter having a MAC value different from what is calculated in 34.108 clause 8.1.2.1 step 4. with reject cause "MAC failure" with AUTN parameter having a MAC value different from what is calculated in 34.108 clause 8.1.2.1 step 4. with reject cause "MAC failure" R99 and REL-4: In case message is not received within 30s then the SS should continue from step 10. with AUTN parameter having a MAC value different from what is calculated in 34.108 clause 8.1.2.1 step 4. R99 and REL-4: Optional step The SS verifies that the UE does not attempt to access the network for 30s. R99 and REL-4: Optional step
2		SS		
3		→	LOCATION UPDATING REQUEST	
4		←	AUTHENTICATION REQUEST	
5		→	AUTHENTICATION FAILURE	
6		←	AUTHENTICATION REQUEST	
7		→	AUTHENTICATION FAILURE	
8		←	AUTHENTICATION REQUEST	
9		SS		
10		SS		The following messages shall be sent and 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) 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 shall should be performed. with AUTN parameter having a MAC value different from what is calculated in 34.108 clause 8.1.2.1 step 4. with reject cause "MAC failure" The SS waits T3214 expiry. The SS verifies that the UE does not attempt to access the network for 30s.
11		SS		
12		→	LOCATION UPDATING REQUEST	
13		←	AUTHENTICATION REQUEST	
14		→	AUTHENTICATION FAILURE	
15		SS		
16		SS		
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.

9.2.5.5 Test requirement

For R99 and REL-4 UE:

Alternative 1:

- After step 6, when the UE have received the second AUTHENTICATION REQUEST message with invalid MAC value, the UE shall not attempt to access the network in cell B.

Alternative 2:

- After step6, when the UE have received the second AUTHENTICATION REQUEST message with invalid MAC value while the timer T3214 is running, the UE shall send an AUTHENTICATION FAILURE message with reject cause "MAC failure" to the SS; and
- After step 8, when the UE have received the third AUTHENTICATION REQUEST message with invalid MAC value, the UE shall not attempt to access the network in cell B.

For REL-5 UE:

- After step 6, when the UE have received the second AUTHENTICATION REQUEST message with invalid MAC value while the timer T3214 is running, the UE shall send an AUTHENTICATION FAILURE message with reject cause "MAC failure" to the SS; and
- After step 8, when the UE have received the third AUTHENTICATION REQUEST message with invalid MAC value, the UE shall not attempt to access the network in cell B.

After step 15, when the timer T3214 has expired, the UE shall not attempt to access the network in cell A.

9.3 Identification

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.

9.3.1 General Identification

9.3.1.1 Definition

9.3.1.2 Conformance requirement

- 1) When requested by the network the UE shall send its IMSI.
- 2) When requested by the network the UE shall send the TMSI which it was previously allocated.
- 3) When requested by the network the UE shall send its IMEI as stored in the UE.
- 4) When requested by the network the UE shall send its IMEISV as stored in the UE.

Reference(s)

TS 24.008 clause 4.3.3.

9.3.1.3 Test purpose

- 1) To verify that the UE sends identity information as requested by the system in the following cases: IMSI and TMSI are requested in non-security mode, IMEI is requested in security mode.
- 2) To verify that the UE sends its IMEI, when requested to do so, in non- security mode.
- 3) To verify that the UE sends its IMEISV, when requested to do so, in non- security mode.

9.3.1.4 Method of test

9.3.1.4.1 Identification

Initial conditions

- System Simulator:
 - 1 cell, default values.

- User Equipment:
 - the UE has a valid TMSI. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

IMEI of the UE.

IMEISV of the UE.

Test Procedure

The SS requests identity information from the UE:

- IMSI in non security mode;
- allocated TMSI in non security mode;
- IMEI in non security mode;
- IMEISV in non security mode;
- IMEI in security mode.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2		→	PAGING RESPONSE	
3		←	IDENTITY REQUEST	"Identity type" IE is IMSI.
4		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMSI of the UE.
5		←	IDENTITY REQUEST	"Identity type" IE is TMSI.
6		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the allocated TMSI of the UE.
6a		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
6b		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI of the UE.
6c		←	IDENTITY REQUEST	"Identity type" IE is IMEISV.
6d		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEISV of the UE.
7		SS		The SS starts ciphering and integrity protection.
8			Void	
9		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
10		→	IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI stored in the UE.
11		SS		The SS releases the RRC connection.
12			Void	

Specific message contents

None.

9.3.1.5 Test requirement

- 1) At step 4 the UE shall send its IMSI.
- 2) At step 6 the UE shall send the TMSI which it was previously allocated.
- 3) At step 6b and step 10 the UE shall send its IMEI as stored in the UE.
- 4) At step 6 the UE shall send its IMEISV as stored in the UE.

9.3.2 Handling of IMSI shorter than the maximum length

9.3.2.1 Definition

9.3.2.2 Conformance requirement

The UE shall be capable of handling an IMSI that is not of the maximum length.

Reference(s)

TS 24.008 clause 10.5.1.4.

9.3.2.3 Test purpose

To check that the UE behaves correctly when activated with an IMSI of length less than the maximum length.

In this condition, the UE shall:

- perform location updating;
- answer to paging with IMSI;
- give the correct IMSI when asked by an IDENTITY REQUEST;
- attempt CM connection establishment when requested to;
- attempt IMSI detach when needed;
- erase its TMSI when the IMSI is sent by the network in a LOCATION UPDATING ACCEPT or a TMSI REALLOCATION COMMAND message.

9.3.2.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default values;
 - IMSI attach/detach bit set to "1".
- User Equipment:
 - the UE has no valid TMSI;
 - it is "idle updated";
 - the IMSI has the value 001011234.

Related ICS/IXIT statement(s)

On/Off switch - Yes/No.

Foreseen final state of UE

The UE has no valid TMSI. It is in "idle, updated".

Test Procedure

The UE is paged with its IMSI. The UE shall answer to paging and include the correct IMSI in the PAGING RESPONSE message. During call establishment, the SS asks for the IMSI of the UE. The UE shall answer by an IDENTITY RESPONSE message including the correct IMSI. During the active phase of the call, the SS modifies the

scrambling code of DL DPCH. The UE performs call re-establishment. The TMSI REALLOCATION COMMAND including a TMSI is sent to the UE. The UE acknowledges this message. The call is released.

The UE is paged with its TMSI. The UE shall answer to paging and includes its TMSI in the PAGING RESPONSE message. During call establishment, the SS sends a TMSI REALLOCATION COMMAND including the IMSI to the UE. The UE shall acknowledge this message. The UE shall erase its TMSI. The call is released.

The UE is switched off or has its power source removed. The UE performs IMSI detach. The UE shall include the correct IMSI in the IMSI DETACH INDICATION message.

The UE is switched on or powered on. The UE performs IMSI attach. The UE shall include the correct IMSI in the LOCATION UPDATING REQUEST message. A TMSI is allocated to the UE.

The LAC of the cell is changed. The UE performs location updating. The SS includes the IMSI in the LOCATION UPDATING ACCEPT message.

A mobile originated CM connection is attempted. The UE shall include the correct IMSI in the CM SERVICE REQUEST message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains IMSI of UE.
2		→	PAGING RESPONSE	Establishment cause: Terminating Conversational Call. "mobile identity" contains the IMSI of the UE.
3		←	IDENTITY REQUEST	"identity type" IE is IMSI.
4		→	IDENTITY RESPONSE	"mobile identity" IE contains the IMSI of the UE.
5				The call is established using the sequence of the generic terminating call set-up procedure.
6				The SS modifies the scrambling code of DL DPCH for generating lower layer failure. Cell update procedure for radio link failure is performed
6a			Void	
6b			Void	
6c			Void	
7			Void	
8			Void	
9			Void	
10			Void	
10a		←	AUTHENTICATION REQUEST	
10b		→	AUTHENTICATION RESPONSE	
10c		SS		The SS starts integrity protection.
10d			Void	
11		←	TMSI REALLOCATION COMMAND	"mobile identity" contains a TMSI.
12		→	TMSI REALLOCATION COMPLETE	
13		SS		The SS releases the RRC connection.
14			Void	
15		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains TMSI of UE. Establishment cause: Terminating Conversational Call. "mobile identity" contains the TMSI of the UE.
16		→	PAGING RESPONSE	
17		←	AUTHENTICATION REQUEST	
18		→	AUTHENTICATION RESPONSE	
18a		SS		The SS starts integrity protection.
18b			Void	
19		←	TMSI REALLOCATION COMMAND	"mobile identity" contains a IMSI of UE.
20		→	TMSI REALLOCATION COMPLETE	
21		SS		The SS releases the RRC connection.
22			Void	
23		UE		If possible (see ICS) the UE is switched off, otherwise the UE has its power source removed. A Detach Request will can be received in PS mode.
24		SS		If the UE was switched off it performs IMSI detach. The SS verifies that the IE "Establishment cause" in the received RRC Connection REQUEST message is set to "Detach".
25			Void	
26			Void	
27		→	IMSI DETACH INDICATION	"mobile identity" contains IMSI of UE.
28		SS		The SS releases the RRC connection.
29			Void	
30		UE		The UE is switched on or has power restored. The subsequent GMM attach shall should be rejected if received in the PS mode
31			Void	
32			Void	
33			Void	
34		→	LOCATION UPDATING REQUEST	"mobile identity" contains IMSI of UE.
35		←	LOCATION UPDATING ACCEPT	"mobile identity" contains a TMSI.

Step	Direction		Message	Comments
	UE	SS		
36		→	TMSI REALLOCATION COMPLETE	
37		SS		The SS releases the RRC connection.
38			Void	
39		SS		The SS changes the LAC of the cell.
40		SS		The SS verifies that the UE sends RRC Connection REQUEST message within 35s of the LAC being changed.
41			Void	
42			Void	
43		→	LOCATION UPDATING REQUEST	"mobile identity" contains TMSI of the UE.
44		←	LOCATION UPDATING ACCEPT	"mobile identity" contains IMSI of the UE.
45		SS		The SS releases the RRC connection.
46			Void	
47		UE		a mobile originated CM connection is attempted.
48			Void	
49			Void	
50			Void	
51		→	CM SERVICE REQUEST	"mobile identity" contains IMSI of the UE.
52		SS		The SS releases the RRC connection.
53			Void	

Specific message contents

None.

9.3.2.5 Test requirement

At step 2 the UE shall answer to paging with IMSI.

At step 4 the UE shall answer to the SS with the correct IMSI in an IDENTITY RESPONSE message.

At step 19 the IMSI is sent by the network in a TMSI REALLOCATION COMMAND message, at step 27 the UE shall attempt IMSI detach.

At step 34 the UE shall perform location updating.

At step 44 the IMSI is sent by the network in a LOCATION UPDATING ACCEPT message, at step 51 the UE shall attempt CM connection establishment and include the correct IMSI in the CM SERVICE REQUEST message.

9.4 Location updating

This procedure is used to register the UE in the network. If it is not performed correctly, no call can be established.

9.4.1 Location updating / accepted

9.4.1.1 Definition

9.4.1.2 Conformance requirement

1.

1.1 if the network accepts a location updating from the UE and reallocates a TMSI in the LOCATION UPDATING ACCEPT message the UE shall acknowledge the reception of the new TMSI;

1.2 the UE shall answer to paging with this TMSI and include it in a PAGING RESPONSE message.

- 2 If the network accepts a location updating from the UE and the LOCATION UPDATING ACCEPT message contains neither TMSI nor IMSI, the UE shall answer to paging when addressed with the last allocated TMSI and include it in the PAGING RESPONSE message.
- 3.

 - 3.1 if the network accepts a location updating from the UE by use of a LOCATION UPDATING ACCEPT message containing the IMSI of the UE, the UE shall not answer paging with the last allocated TMSI;
 - 3.2 the UE shall still answer paging with IMSI.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.4.1.3 Test purpose

- 1) To test the behaviour of the UE if the network accepts the location updating of the UE.

For the network response three different cases are identified:

- 1.1) TMSI is allocated;
- 1.2) location updating accept contains neither TMSI nor IMSI;
- 1.3) location updating accept contains IMSI.

9.4.1.4 Method of test

Initial conditions:

- System Simulator:
 - two cells, A and B, belonging to different location areas with location area identification a and b of the same PLMN;
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has a valid TMSI (=TMSI1) and CKSN (=CKSN1). It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

None.

Test Procedure

The UE is made to select cell B. A normal location updating with TMSI reallocation is performed in cell B. The RRC CONNECTION is released. The SS checks, by paging, that the UE has stored the newly allocated TMSI. The RRC CONNECTION is released. The UE is made to select cell A. A normal location updating is performed in cell A. The LOCATION UPDATING ACCEPT message contains neither IMSI nor TMSI. The SS checks, by paging, that the UE has kept the old TMSI. The RRC CONNECTION is released. The UE is made to select cell B. A normal location updating is performed in cell B. The LOCATION UPDATING ACCEPT message contains an IMSI. The SS checks, by paging, that the UE has deleted its TMSI and responds to paging with IMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		

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 shall should be performed.
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI1. The MM message is included in the RRC message INITIAL DIRECT TRANSFER with the CN domain identity set to CS domain. The SS starts integrity protection.
5a		SS		
5b			Void	
6		←	LOCATION UPDATING ACCEPT	"Mobile identity" = new TMSI (=TMSI2), LAI = b.
7		→	TMSI REALLOCATION COMPLETE	
8		SS		
9			Void	
9a				SS waits 5 seconds to guarantee that the UE is in service.
10		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI2) and the new LAI (=b). Establishment Cause: Terminating Conversational Call.
11		→	PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI2).
12		SS		The SS releases the RRC Connection.
13			Void	
14		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)
15		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 shall should be performed.
16			Void	
17			Void	
18a		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = b, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2. The SS starts integrity protection.
18b		SS		
18c			Void	
19		←	LOCATION UPDATING ACCEPT	"Mobile identity" IE not included. LAI = a
20		SS		
21			Void	The SS releases the RRC connection and waits 5 s to guarantee that the UE is in service.
22		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.12.2 "Initial UE identity" IE contains the TMSI (= TMSI2) and LAI (=a). Establishment Cause: Terminating Conversational Call.
23		→	PAGING RESPONSE	"Mobile identity" IE contains the TMSI (=TMSI2).
24		SS		The SS releases the RRC connection.
25			Void	
26		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)

Step	Direction		Message	Comments
	UE	SS		
27		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration". If PS mode: a routing area updating procedure shall be performed.
28			Void	
29			Void	
30a	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2. The SS starts integrity protection.
30b		SS		
30c			Void	
31	←		LOCATION UPDATING ACCEPT	"Mobile identity" IE contains IMSI and LAI (=b).
32		SS		
33			Void	The SS waits 5 s to guarantee that the UE is in service.
34	←		PAGING TYPE 1	"UE identity" IE contains the old TMSI (= TMSI2). Paging Cause: Terminating Conversational Call.
35		UE		The UE shall ignore this message. This is checked during 5 s.
36	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the IMSI. Establishment Cause: Terminating Conversational Call.
37	→		PAGING RESPONSE	"Mobile identity" IE contains the IMSI.
38		SS		The SS releases the RRC connection.
39			Void	
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.

9.4.1.5 Test requirement

At step 7 the UE shall acknowledge the reception of the new TMSI (TMSI2).

At step 11 the UE shall answer to paging with this TMSI (TMSI2).

At step 23 the UE shall answer to paging with the last allocated TMSI (TMSI2).

At step 35 the UE shall not answer paging with the last allocated TMSI, but at step 37 the UE shall still answer paging with IMSI.

9.4.2 Location updating / rejected

9.4.2.1 Location updating / rejected / IMSI invalid

9.4.2.1.1 Definition

9.4.2.1.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall:
 - 1.1 not perform normal location updating;
 - 1.2 not perform periodic location updating;
 - 1.3 not respond to paging with IMSI;

- 1.4 not respond to paging with TMSI;
- 1.5 reject any request from CM entity for MM connection other than for emergency call;
- 1.6 not perform IMSI detach if it is switched off or has its power source removed.
- 2) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.
- 3) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.1.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "IMSI unknown in HLR", "illegal MS" or "Illegal ME".

9.4.2.1.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas of the same PLMN;
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both cells.
- User Equipment:
 - the UE has valid TMSI(= TMSI1), CKSN(= CKSN1) and CK, IK. It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

USIM removal possible while the UE is powered Yes/No.

Switch off on button Yes/No.

Support for speech Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "IMSI unknown in HLR". The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE and the substate NO IMSI, i.e. does not perform normal location updating when a new cell of the same or another PLMN is entered, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls, does not perform IMSI detach if it is switched off or has its power source removed and deletes the stored LAI, CKSN and TMSI.

The test is repeated with cause value "Illegal MS" and with cause value "Illegal ME".

Expected sequence

The sequence is executed for execution counter k = 1, 2, 3.

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell B. 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 is set to "Registration". <u>If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.</u>
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "Mobile Identity" = TMSI1
6		←	LOCATION UPDATING REJECT	"Reject cause" IE is "IMSI unknown in HLR" for k = 1, "Illegal MS" for k = 2, "Illegal ME" for k = 3.
7		SS		The SS releases the RRC Connection.
8			Void	
9		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)
10		UE		The UE performs cell reselection according to procedure as specified in (this however is not checked until step 23). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		SS		The SS waits at least 7 minutes for a possible periodic updating.
12		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
13		←	PAGING TYPE 1	The UE is paged in cell A. "UE identity" IE contains IMSI. Paging Cause: Terminating Conversational Call.
14		UE		The UE shall ignore this message. This is verified during 3 s.
15		←	PAGING TYPE 1	The UE is paged in cell A. "UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
16		UE		The UE shall ignore this message. This is verified during 3 s.
17		UE		A MO CM connection is attempted.
18		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
19		UE		If the UE supports speech (see ICS), it is made to perform an emergency call.
20		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Emergency call".
This message is sent in cell A.				
21			Void	
22			Void	
23		→	CM SERVICE REQUEST	"CM service type": Emergency call establishment. "Mobile identity": type of identity is set to IMEI.
24		←	CM SERVICE ACCEPT	
25		→	EMERGENCY SETUP	
26		←	RELEASE COMPLETE	"Cause" = unassigned number.
27		SS		The SS releases the RRC connection.
28			Void	

Step	Direction		Message	Comments
	UE	SS		
29	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. A Detach Request will be received in PS mode.
30	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
31	UE			Depending on what has been performed in step 29 the UE is brought back to operation. The subsequent GMM attach shall <u>should be rejected if received in the PS mode.</u>
32	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration".
33			Void	
34			Void	
35	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
36	←		AUTHENTICATION REQUEST	"CKSN" = CKSN2.
37	→		AUTHENTICATION RESPONSE	
37a	SS			The SS starts integrity protection.
38	←		LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
39	→		TMSI REALLOCATION COMPLETE	
40	SS			The SS releases the RRC connection.
41			Void	
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.

9.4.2.1.5 Test requirement

- 1) 1.1 At step 10 the UE shall not perform normal location updating.
- 1.2 At step 12 the UE shall not perform periodic location updating.
- 1.3 At step 14 the UE shall not respond to paging with IMSI.
- 1.4 At step 16 the UE shall not respond to paging with TMSI.
- 1.5 At step 18 the UE shall reject a MO CM connection.
- 1.6 At step 30 the UE shall not initiate an RRC connection establishment on cell A or on cell B.
- 2) At step 20 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".
- 3) At step 35 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the LAI IE set to "deleted LAI" on cell A.

9.4.2.2 Location updating / rejected / PLMN not allowed

9.4.2.2.1 Definition

9.4.2.2.2 Conformance requirement

- 1) If the network reject a location updating from the UE with the cause "PLMN not allowed" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 not perform IMSI detach when switched off;
 - 1.3 not perform IMSI attach when switched on in the same location area;
 - 1.4 not perform normal location updating when in the same PLMN and when that PLMN is not selected manually;
 - 1.5 reject any request from CM entity for MM connection other than for emergency call.
- 2) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall:
 - 2.1 perform normal location updating when a new PLMN is entered;
 - 2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call".
- 3) If the network rejects a location updating from the UE with the cause "PLMN not allowed" and if after that the PLMN from which this rejection was received, is manually selected, the UE shall perform a normal location updating procedure.
- 4) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.2.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "PLMN not allowed".

9.4.2.2.4 Method of test

9.4.2.2.4.1 Location updating / rejected / PLMN not allowed / test 1

Initial conditions

- System Simulator:
 - one cell: C, belonging to PLMN1;
 - two cells: A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN and from PLMN1;
 - IMSI attach/detach is allowed in cells A and B but not in cell C;
 - the T3212 time-out value is 1/10 hour in cells A and B.

NB: i) Cell C will be mapped to Cell 1 as found in TS 34.108 clause 6.1.4.1.

ii) Cell A and B will be mapped to Cell 4 and 5 respectively, as found in TS 34.108 clause 6.1.4.1.

- User Equipment:

- the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell C;
- the UE is in manual mode for PLMN selection.

Related ICS/IXIT statement(s)

USIM removal possible while the UE is powered Yes/No.

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Support for speech Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not perform IMSI detach, does not perform IMSI attach if activated in the same location area, rejects any request for CM connection establishment other than emergency call, accepts a request for an emergency call, performs normal location updating only when a new PLMN is entered and deletes the stored LAI, CKSN and TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell B. The UE is switched off (or power is removed). A Detach Request will can be received in PS mode.
2		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "non-suitable cell". (see note)
3	UE			The UE is switched on. (or power is reapplied) If necessary the UE is put in manual selection mode. The UE shall offer the new PLMN as available to the user. The PLMN is manually selected.
4		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". The subsequent GMM attach shall should be rejected if received in the PS mode.
5			Void	
6			Void	
7		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = c, "Mobile Identity" = TMSI1
8		←	LOCATION UPDATING REJECT	"Reject cause" = PLMN not allowed.
9		SS		The SS releases the RRC connection.
10			Void	
11		SS		The SS waits for a possible periodic updating for 7 minutes.
12		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
13		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
14		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
15		UE		Depending on what has been performed in step 13 the UE is brought back to operation. The UE is not made to select PLMN 2.

Step	Direction		Message	Comments
	UE	SS		
16	UE			The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
17	SS			The following message 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)
18	UE			No access to the network shall be registered by the SS within one minute.
19	UE			If the UE supports speech (see ICS) it is made to perform an emergency.
20	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency Call".
21			Void	
22			Void	
23	→		CM SERVICE REQUEST	"CM service type" = Emergency call establishment.
24	←		CM SERVICE ACCEPT	
25	→		EMERGENCY SETUP	
26	←		RELEASE COMPLETE	Cause IE: "unassigned number".
27	SS			The SS releases the RRC connection.
28			Void	
29	UE			A MO CM connection is attempted.
30	UE			The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
31	UE			The following messages are sent and shall be received on cell C. The UE is switched off.
32	SS			Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note)
33	UE			The UE is switched on. If necessary the UE is placed into the automatic mode.
34	SS			The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration".
35			Void	
36			Void	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.
37a	SS			The SS starts integrity protection.
38	←		LOCATION UPDATING ACCEPT	"Mobile identity" = TMSI.
39	→		TMSI REALLOCATION COMPLETE	
40	SS			The SS releases the RRC connection.
41			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.2.4.2 Location updating / rejected / PLMN not allowed / test 2

Initial conditions

- System Simulator:

- one cell C, belonging to PLMN1;
 - two cells A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN;
 - IMSI attach/detach is allowed in cells A and B but not in cell C;
 - the T3212 time-out value is 1/10 hour in cells A and B.
 - User Equipment:
 - the UE has a valid TMSI. It is "idle updated" on cell C.
- NB: i) Cell C will be mapped to Cell 1 as found in TS 34.108 clause 6.1.4.1.
- ii) Cell A and B will be mapped to Cell 4 and 5 respectively, as found in TS 34.108 clause 6.1.4.1.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. Then the PLMN from which this rejection was received is manually selected and the SS checks that a normal location updating is performed.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			<p>The following messages are sent and shall be received on cell B.</p> <p>The UE is switched off (or power is removed). A Detach Request will can be received in PS mode.</p> <p>Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "non-suitable cell". (see note)</p> <p>The UE is switched on (or power is reapplied). If the UE is in manual mode, it shall offer the new PLMN as available to the user. In this case the PLMN is manually selected.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". The subsequent GMM attach shall should be rejected if received in the PS mode.</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST</p> <p>← LOCATION UPDATING REJECT "Reject cause" = PLMN not allowed.</p> <p>SS Void Void The SS releases the RRC connection.</p> <p>UE The UE is made to search for PLMNs and the PLMN indicated by the SS is manually selected.</p> <p>SS The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST "location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.</p> <p>Void</p> <p>← LOCATION UPDATING REJECT "Reject cause" = PLMN not allowed.</p> <p>SS The SS releases the RRC connection.</p> <p>Void</p>
2		SS		
3	UE			
3a	UE			
4		SS		
5			Void	
6			Void	
7			→ LOCATION UPDATING REQUEST	
8			← LOCATION UPDATING REJECT	
9		SS	Void	
10			Void	
11	UE			
12		SS		
13			Void	
14			Void	
15			→ LOCATION UPDATING REQUEST	
15a	Void			
15b	←		LOCATION UPDATING REJECT	
16		SS		
17			Void	
The following messages are sent and shall be received on cell C.				
18	UE			<p>The UE is switched off.</p> <p>Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note)</p> <p>The UE is switched on. If necessary, the UE is put into the automatic mode.</p> <p>The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Void</p> <p>Void</p> <p>→ LOCATION UPDATING REQUEST "location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.</p> <p>SS The SS starts integrity protection.</p> <p>← LOCATION UPDATING ACCEPT "Mobile identity" = TMSI.</p> <p>→ TMSI REALLOCATION COMPLETE</p> <p>SS The SS releases the RRC connection.</p> <p>Void</p>
19		SS		
20	UE			
21		SS		
22			Void	
23			Void	
24			→ LOCATION UPDATING REQUEST	
24a	SS			
25	←		LOCATION UPDATING ACCEPT	
26	→		TMSI REALLOCATION COMPLETE	
27		SS		
28			Void	

Step	Direction		Message	Comments
	UE	SS		
NOTE:	The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.2.5 Test requirement

- 1) 1.1 At step 12 in test 1 the UE shall not perform periodic updating.
 - 1.2 At step 14 in test 1 the UE shall not initiate an RRC connection establishment (IMSI detach).
 - 1.3 At step 16 in test 1 the UE shall not initiate an RRC connection establishment (IMSI attach).
 - 1.4 At step 16 in test 1 the UE shall not perform normal location updating.
 - 1.5 At step 30 in test 1 the UE shall reject a MO CM connection.
- 2) 2.1 At step 37 in test 1 the UE shall perform normal location updating.
 - 2.2 At step 20 in test 1 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".
- 3) At step 11 in test 2 the UE is made to search for PLMNs and the PLMN indicated by the SS is manually selected, and at step 15 the UE shall perform a normal location updating procedure.
- 4) At step 37 in test 1 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell C.

9.4.2.3 Location updating / rejected / location area not allowed

9.4.2.3.1 Definition

9.4.2.3.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 not respond to paging with TMSI;
 - 1.3 reject any request from CM entity for MM connection other than for emergency call;
 - 1.4 not perform IMSI detach.
 - 1.5 not delete the list of "equivalent PLMNs".
- 2) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:
 - 2.1 perform normal location updating when a new location area is entered;
 - 2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call";
 - 2.3 delete the list of forbidden LAs after switch off (power off).
- 3) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.3.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "Location Area not allowed".

To test that the UE deletes the list of forbidden LAs after switch off (power off).

9.4.2.3.4 Method of test

Initial conditions

- System Simulator:
 - three cells: A, B and C, belonging to different location areas a, b and c. Cell A and B belongs to PLMN1. Cell C belongs to PLMN2.
 - IMSI attach/detach is allowed in both cells;
 - the T3212 time-out value is 1/10 hour in both 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 TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell A.
 - the UE has a list of "equivalent PLMNs" containing PLMN1 and PLMN2.

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Support for speech Yes/No.

Method to clear the list of forbidden location areas periodically.

Test Procedure

The SS rejects a normal location updating with the cause value "Location Area not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not respond to paging with TMSI, rejects any requests from CM entities for MM-connections except emergency calls, does not perform IMSI detach, does not delete the list of "equivalent PLMNs", performs normal location updating when a new location area is entered, deletes the list of forbidden LAs when switched off and deletes the stored LAI, CKSN and TMSI.

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		
1		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the " Suitable neighbour cell". Set the cell type of cell C to the " Suitable neighbour 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 UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "Mobile Identity" = TMSI1
6	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed".
7		SS		After the sending of this message, the SS waits for the disconnection of the mainsignalling link. The SS releases the RRC connection.
8			Void	
9		SS		SS waits for a possible location updating for 7 minutes.
10		UE		The UE shall not initiate an RRC-connection establishment either on cell A, C or cell B.
11	←		PAGING TYPE 1	The UE is paged in cell B. "UE identity" = TMSI. Paging Cause: Terminating Conversational Call.
12		UE		The UE shall ignore this message. This is checked during 3 s.
13		UE		A MO CM connection is attempted.
14		UE		The UE shall not initiate an RRC connection establishment on cell A, C or cell B. This is checked during 3 s.
15		UE		If the UE supports speech (see ICS), it is made to perform an emergency call.
16		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency call".
17			Void	
18			Void	
19	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
20	←		CM SERVICE ACCEPT	
21	→		EMERGENCY SETUP	
22	←		RELEASE COMPLETE	Cause: "unassigned number".
23		SS		The SS releases the RRC connection.
24			Void	
25		UE		If possible (see ICS) switch off is performed. Otherwise the power is removed.
26		UE		The UE shall not initiate an RRC connection establishment on cell A, C or on cell B (check for IMSI detach) This is checked during 3 s.
27		UE		Depending on what has been performed in step 25 the UE is brought back to operation. The subsequent GMM attach shall should be rejected if received in the PS mode.
28		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
29			Void	
30			Void	
31	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI, "mobile identity" = IMSI (This checks the deletion of the forbidden lists)

Step	Direction		Message	Comments
	UE	SS		
32	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed". The SS releases the RRC connection.
33		SS		
34			Void	
The following messages are sent and shall be received on cell C.				
35		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 "Serving cell". (see note). The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
36		SS		
37			Void	The SS starts integrity protection. Mobile identity = TMSI. The SS releases the RRC connection.
38			Void	
39	→		LOCATION UPDATING REQUEST	
40	←		AUTHENTICATION REQUEST	
41	→		AUTHENTICATION RESPONSE	
41a		SS		
42	←		LOCATION UPDATING ACCEPT	
43	→		TMSI REALLOCATION COMPLETE	
44		SS		
45			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.3.5 Test requirement

- 1) 1.1 At step 10 the UE shall not perform periodic updating.
- 1.2 At step 12 the UE shall not respond to paging with TMSI.
- 1.3 At step 14 the UE shall not initiate an RRC connection establishment.
- 1.4 At step 26 the UE shall not initiate an RRC connection establishment (IMSI detach).
- 1.5 At step 39 the UE shall perform normal location updating on cell C.
- 2) 2.1 At step 39 the UE shall perform normal location updating.
- 2.2 At step 16 the UE shall accept a request for an emergency call.
- 2.3 At step 31 the UE shall send a LOCATION UPDATING REQUEST message on cell B.
- 3) At step 31 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell B.

9.4.2.4 Location updating / rejected / roaming not allowed in this location area

9.4.2.4.1 Definition

9.4.2.4.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:

- 1.1 not perform periodic updating;
 - 1.2 not respond to paging with TMSI;
 - 1.3 reject any request from CM entity for MM connection other than for emergency call;
 - 1.4 not perform IMSI detach.
- 2) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:
 - 2.1 perform normal location updating when a new location area is entered;
 - 2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call";
 - 2.3 periodically search for its HPLMN.
 - 3) The UE shall reset the list of "Forbidden location areas for roaming" when it is switched off or has its power source removed or when the USIM is removed.
 - 4) The UE shall contain a list of "forbidden location areas for roaming". 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". The lists shall accommodate each 10 or more location area identifications.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.4.3 Test purposes

Test purpose 1

To test that on receipt of a rejection using the Roaming cause code, the UE ceases trying to update on that cell, that this situation continues for at least one periodic location interval period, and that the corresponding list is re-set by switching off the UE or removing its power source.

Test purpose 2

To test that if no cell is available, the UE does not answer to paging with TMSI, rejects a request from CM entity other than for emergency calls.

Test purpose 3

To test that at least 6 entries can be held in the list of "forbidden location areas for roaming" (the requirement 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.

Test purpose 5

To test that if the USIM is removed the list of "forbidden location areas for roaming" is cleared.

9.4.2.4.4 Method of test

Initial conditions

The initial conditions shall be met before each of the different procedures.

- System Simulator:

- for procedures 1, 2, 3 and 5: Two cells A and B, belonging to different location areas of the same PLMN with LAI a and b. The MCC of that PLMN is the same as that of the HPLMN. The MNC of that PLMN is different from that of the HPLMN;
- for procedure 4: three cells A, B, C of the same PLMN which is not the HPLMN with 3 different location area codes. Cells should differ in signal strength by 10 dB with cell A being the strongest and cell C the weakest. There should be a 20 dB range between A and C. A should be set to a level of - 40 dBm;
- IMSI attach/detach is allowed in every cell;
- the T3212 time-out value is 1/10 hour in every cell.
- User Equipment:
 - procedures 1, 2, 3 and 5: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B;
 - procedure 4: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell A;
 - the list of "forbidden location areas for roaming" shall be empty (this may be achieved by either removing the USIM or switching the UE OFF then ON or removing the UE power source depending on ICS).

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Method to clear the list of location areas for roaming periodically.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedures

Procedure 1:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The UE is turned off and then on. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on). This procedure is performed another time but the deletion of the list is checked while removing the USIM (instead of turning off the UE).

Procedure 2:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not answer to a paging message with TMSI, rejects a request from CM entity but supports an emergency call.

Procedure 3:

- The SS rejects a normal location updating 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 begin a location updating procedure on the non-allowed location areas.

Procedure 4:

- The SS accepts a periodic location updating on a cell not belonging to the HPLMN. Then when the UE attempts to perform a periodic location updating to this cell, the SS rejects this location updating with the cause value "Roaming not allowed in this location area". Two cells are then available, one belonging to the HPLMN but with the weakest level. It is checked that the UE returns to its HPLMN.

Procedure 5: If USIM removal is possible while UE is powered:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The USIM is removed and inserted in the UE. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on).

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

The following procedure is used during the test:

- change_LAI (x):
 - the purpose of this procedure is to change the value of Location Area Identifier of cell x;
 - the Location Area Identifier of cell x shall be changed. The code shall be chosen arbitrarily but shall be different from any previously used in this procedure. The code shall have the same MCC as the Home PLMN and shall not have the same MNC as the Home PLMN.

Procedure 1

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).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". <u>If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.</u>
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	Location Updating Type = normal.
6		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7		SS		The SS releases the RRC connection
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		If possible (see ICS) the UE is switched off. Otherwise if possible the power is removed.
12		UE		Depending on what has been performed in step 11 the UE is brought back to operation and placed in an automatic mode. <u>The subsequent GMM attach shall be rejected if received in the PS mode.</u>
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	Location Updating Type = normal.
16a		SS		The SS starts integrity protection.
17		←	LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18		SS		The SS releases the RRC connection.
19			Void	
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".				

Procedure 2

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 "Suitable neighbour cell". (see note).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message is sent on cell A. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7		SS		The SS releases the RRC connection.
8			Void	
9		SS		The following messages are sent and shall be received on cell B. 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 UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
10			Void	
11			Void	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14		SS		The SS releases the RRC connection.
15			Void	
16		SS		The SS waits for a possible location updating procedure on both cells A and B for 2 minutes.
17		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 2 minutes after the end of step 15.
18			PAGING TYPE 1	"UE identity" = TMSI. This message is sent on cell A and on cell B.
19		UE		Paging Cause: Terminating Conversational Call. The UE shall not initiate an RRC connection on cell A or on cell B. This is checked during 3 s.
20		UE		A MO CM connection is attempted.
21		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
The following messages are sent and shall be received on cell A. Steps 22 to 31 are performed if the UE supports speech.				
22		UE		An emergency call is attempted.
23		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency Call".
24			Void	
25			Void	
26	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
27	←		CM SERVICE ACCEPT	
28	→		EMERGENCY SETUP	
29	←		RELEASE COMPLETE	"Cause" = unassigned number.
30		SS		The SS releases the RRC connection.

31		Void
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Procedure 3

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". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16	SS			Change_LAI (A) within 5 s after step 13.
The following messages are sent and shall be received on cell A.				
17	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
18	←		RRC CONNECTION SETUP	
19	→		RRC CONNECTION SETUP COMPLETE	
20	→		LOCATION UPDATING REQUEST	
21	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24	SS			Change_LAI (B) within 5 s after step 21.
The following messages are sent and shall be received on cell B.				
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.

Step	Direction		Message	Comments
	UE	SS		
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	
29	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
32		SS		Change_LAI (A) within 5 s after step 29.
The following messages are sent and shall be received on cell A.				
33	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
34	←		RRC CONNECTION SETUP	
35	→		RRC CONNECTION SETUP COMPLETE	
36	→		LOCATION UPDATING REQUEST	
37	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
38	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
40		SS		Change_LAI (B) within 5 s after step 37.
The following messages are sent and shall be received on cell B.				
41	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. If PS mode: a ROUTING AREA UPDATE REQUEST should shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.
42	←		RRC CONNECTION SETUP	
43	→		RRC CONNECTION SETUP COMPLETE	
44	→		LOCATION UPDATING REQUEST	
45	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
46	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
47	→		RRC CONNECTION RELEASE COMPLETE	
48		SS		The SS waits for a possible location updating procedure on both cells A and B for 7 minutes.
49		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 7 minutes after the end of step 47.
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Procedure 4

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell A.				
1		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes after the initial conditions have been established.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	Location Updating Type = periodic.
6	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The location area identity of cell C shall be changed to that of a location area in the Home PLMN.
10		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes. If PS mode: a ROUTING AREA UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message is sent on cell A within 7 minutes after the end of step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
15	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell C.				
18	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. The subsequent GMM attach shall should be rejected if received in the PS mode.
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
22	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
23	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
24	→		RRC CONNECTION RELEASE COMPLETE	

Procedure 5

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		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 UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area". The SS releases the RRC connection.
7			Void	
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		The USIM is removed.
12		UE		The USIM is inserted into the ME. The subsequent GMM attach shall should be rejected if received in the PS mode.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16	→		LOCATION UPDATING REQUEST	Location Updating Type = normal.
16a		SS		The SS starts integrity protection.
17	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18		SS		The SS releases the RRC connection.
19			Void	
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.

9.4.2.4.5 Test requirement

- 1) 1.1 At step 10 in Procedure 1 the UE shall not perform periodic updating.
- 1.2 At step 19 in Procedure 2 the UE shall not respond to paging with TMSI.
- 1.3 At step 21 in procedure 2 the UE shall not initiate an RRC connection establishment.
- 1.4 After step 13 in Procedure 5 the UE shall perform location updating (at step 16; not perform IMSI detach).
- 2) 2.1 After step 9 in Procedure 2 the UE perform normal location updating (at step 12).
- 2.2 At step 23 in Procedure 2 the UE shall initiate a RRC CONNECTION REQUEST message with the establishment cause set to "Emergency call";
- 2.3 After step 14 in Procedure 4 the UE shall attempt to location updating with location updating type "periodic" (at step 21: periodically search for its HPLMN).

- 3) After step 12 in Procedure 5 the UE shall perform location updating (at step 16) when the USIM is removed.
- 4) At step 49 in Procedure 3 the UE shall not attempt to begin a location updating procedure.

9.4.2.5 Location updating / rejected / No Suitable Cells In Location Area

9.4.2.5.1 Definition

9.4.2.5.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause " No Suitable Cells In Location Area " the UE shall:
 - 1.1 perform normal location updating at a suitable cell in another location area in the same PLMN,
 - 1.2 not delete the list of "equivalent PLMNs".

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "No Suitable Cells In Location Area".

9.4.2.5.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas a and b and belonging to PLMN1;
 - one cell: C, belonging to PLMN2;
 - one cell: D, belonging to PLMN3;
 - IMSI attach/detach is allowed in cells A, B, C and D;
- 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 7 as found in TS 34.108 clause 6.1.4.2.
- User Equipment:
 - the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell A.
 - the UE has a list of "equivalent PLMNs" containing PLMN1 and PLMN2.

Related ICS/IXIT statement(s)

None.

Test Procedure

The SS rejects a normal location updating with the cause value "No Suitable Cells In Location Area". The RRC CONNECTION is released. The SS checks that the UE shall search for a suitable cell in a different location area on the equivalent PLMN, which is equal condition for the UE as same PLMN, and shall perform normal location updating procedure in that cell

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
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". 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)
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 UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "mobile station classmark 1" as given by the ICS and "Mobile Identity" = TMSI1.
6		←	LOCATION UPDATING REJECT	"Reject cause" = "No Suitable Cells In Location Area".
7		SS		The SS releases the RRC connection.
8			Void	
The following messages are sent and shall be received on cell C.				
9		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". The subsequent GMM attach shall should be rejected if received in the PS mode.
10			Void	
11			Void	
12		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = TMSI1.
13			Void	
14			Void	
15		SS		The SS starts integrity protection.
16			Void	
17		←	LOCATION UPDATING ACCEPT	Mobile identity = TMSI, LAI = c.
18		→	TMSI REALLOCATION COMPLETE	
19		SS		The SS releases the RRC connection.
20			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.2.5.5 Test requirement

At step 12 the UE shall perform normal location updating on cell C.

9.4.3 Location updating / abnormal cases

9.4.3.1 Void

9.4.3.2 Location updating / abnormal cases / attempt counter less or equal to 4, LAI different

9.4.3.2.1 Definition

9.4.3.2.2 Conformance requirement

- 1) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure, if the attempt counter is smaller than 4 and after expiry of T3211, the UE shall resend its LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 2) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall:
 - 2.1 not answer to paging with the previously allocated TMSI;
 - 2.2 not perform the IMSI detach procedure, when switched off.
- 3) When a failure such as case e) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure and when an emergency call establishment is requested by the user the UE, if it supports speech, shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI and after acceptance by the network it shall send an EMERGENCY SETUP message.
- 4) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall use a request from CM entity other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall answer to paging with IMSI and shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
- 6) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall perform a normal location updating procedure as soon as it enters a new cell.

References

TS 24.008 clauses 4.4.4.2, 4.4.4.9.

9.4.3.2.3 Test purpose

To verify that the UE performs normal location updating procedures when its attempt counter is smaller than 4.

To check that the UE does not perform the IMSI detach procedure when "idle not updated".

To verify that when "idle not updated" the UE can perform an emergency call.

To verify that when "idle not updated" the UE uses requests from CM layer other than emergency call as triggering of a normal location updating procedure.

To verify that the UE performs a normal location updating procedure if it enters a new cell while being "idle not updated".

9.4.3.2.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B of the same PLMN, belonging to different location areas with LAI a and b;
 - ATT flag shall be set to IMSI attach/detach allowed.
- User Equipment:
 - the UE is "idle updated" on cell A. A valid CKSN value is stored in the USIM and is noted "initial CKSN". A TMSI is allocated.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support for speech Yes/No.

Test Procedure

The UE is made to perform a normal location updating procedure. Five types of failure cases are triggered:

- sending of a Location Updating Reject with cause randomly chosen between all defined cause values except 2, 3, 6, 11, 12 and 13 (which trigger a different action) (case g of TS 24.008 clause 4.4.4.9);
- RRC connection failure (case d);
- sending of a RRC CONNECTION RELEASE message before the normal end of the procedure (case f);
- T3210 time-out (case e);
- RR connection establishment failure (case h).

As there is no stored LAI or the stored LAI is different from the broadcast LAI, and the attempt counter in the UE shall be lower than 4, the UE enters the state MM IDLE and substate ATTEMPTING TO UPDATE and waits for T3211 seconds before trying again a location updating procedure.

Then the behaviour of the UE in the MM IDLE state and ATTEMPTING TO UPDATE substate is checked, that is:

- not answer to paging with TMSI;
- not perform an IMSI detach procedure;
- support request for emergency call;
- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;
- perform normal location updating procedure when a new cell is entered.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
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		→	RRC CONNECTION REQUEST	Establishment cause: Registration. <u>If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.</u>
3		←	RRC CONNECTION SETUP	
4		→	RRC CONNECTION SETUP COMPLETE	
5		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6		←	LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8		→	RRC CONNECTION RELEASE COMPLETE	
9		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
8		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
9		←	RRC CONNECTION SETUP	
12		→	RRC CONNECTION SETUP COMPLETE	
13		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15		(void)		
15a		→	CELL UPDATE	CCCH.
15b		←	RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
17		←	RRC CONNECTION SETUP	
18		→	RRC CONNECTION SETUP COMPLETE	
19		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
21		→	RRC CONNECTION RELEASE COMPLETE	
22		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
23		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
24		←	RRC CONNECTION SETUP	
25		→	RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
26		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN. IE mobile Identity = new TMSI. After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
27		←	AUTHENTICATION REQUEST	
28		→	AUTHENTICATION RESPONSE	
28a		←	SECURITY MODE COMMAND	
28b		→	SECURITY MODE COMPLETE	
29		←	LOCATION UPDATING ACCEPT	
30		→	TMSI REALLOCATION COMPLETE	
31		←	RRC CONNECTION RELEASE	
32		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
33		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)
34		→	RRC CONNECTION REQUEST	Establishment cause: Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
35		←	RRC CONNECTION SETUP	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 6 with reject cause #100 and step 7. performs step8. UE identity = old TMSI of the UE. This message is sent continuously to the UE during 8 s. Paging Cause: Terminating Conversational Call. The SS checks that there is no answer from the UE during 12 s. If during steps 39 and 40 the UE attempts to perform a location updating procedure the SS will perform step 38 and then continue the procedure. If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) mobile switch off is performed. Otherwise the power is removed. A Detach Request will can be received in PS mode. The UE shall not initiate an RRC connection establishment on cell A or on cell B during 30 s. Depending on what has been performed in step 42 the UE is brought back to operation. The subsequent GMM attach shall should be rejected if received in the PS mode.
36		→	RRC CONNECTION SETUP COMPLETE	
37		→	LOCATION UPDATING REQUEST	
38		SS		
38a		UE		
39		←	PAGING TYPE 1	
40		SS		
41		SS		
42		UE		
43		UE		
44		UE		
45		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
46		←	RRC CONNECTION SETUP	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN. IE mobile Identity = new TMSI.
47		→	RRC CONNECTION SETUP COMPLETE	
48		→	LOCATION UPDATING REQUEST	
49		←	AUTHENTICATION REQUEST	
50		→	AUTHENTICATION RESPONSE	
50a		←	SECURITY MODE COMMAND	
50b		→	SECURITY MODE COMPLETE	
51		←	LOCATION UPDATING ACCEPT	
52		→	TMSI REALLOCATION COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
53		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
54		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
55		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).
56		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
57		←	RRC CONNECTION SETUP	
58		→	RRC CONNECTION SETUP COMPLETE	
59		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
60		←	AUTHENTICATION REQUEST	Steps 60 and 61 are performed N times. N shall be chosen in such a way that T3210 expires.
61		→	AUTHENTICATION RESPONSE	
62		UE		The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
63		UE		If the UE supports speech it is made to perform an emergency call.
64		→	RRC CONNECTION REQUEST	Establishment cause: Emergency call.
65		←	RRC CONNECTION SETUP	
66		→	RRC CONNECTION SETUP COMPLETE	
67		→	CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.
68		←	CM SERVICE ACCEPT	Cause = unassigned number.
69		→	EMERGENCY SETUP	
70		←	RELEASE COMPLETE	
71		←	RRC CONNECTION RELEASE	The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
72		→	RRC CONNECTION RELEASE COMPLETE	
72a		UE		
73		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
74		←	RRC CONNECTION SETUP	
75		→	RRC CONNECTION SETUP COMPLETE	
76		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
77		←	AUTHENTICATION REQUEST	CKSN = initial CKSN.
78		→	AUTHENTICATION RESPONSE	
78a		←	SECURITY MODE COMMAND	IE mobile Identity = new TMSI.
78b		→	SECURITY MODE COMPLETE	
79		←	LOCATION UPDATING ACCEPT	
80		→	TMSI REALLOCATION COMPLETE	
81		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
82		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
83		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).
84		→	RRC CONNECTION REQUEST	Establishment cause: Registration.

Step	Direction		Message	Comments
	UE	SS		
85	←		RRC CONNECTION SETUP	
86	→		RRC CONNECTION SETUP COMPLETE	
87	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
88		SS	(void)	performs step 14.
88a			(void)	
88b	→		CELL UPDATE	CCCH.
88c	←		RRC CONNECTION RELEASE	CCCH.
88d		SS		performs step 15c.
89		UE		A MO CM connection is attempted before T3211 expiry.
90	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
91	←		RRC CONNECTION SETUP	
92	→		RRC CONNECTION SETUP COMPLETE	
93	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
94	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 96 to 100 will be omitted.
95	→		TMSI REALLOCATION COMPLETE	
96	←		RRC CONNECTION RELEASE	
97	→		RRC CONNECTION RELEASE COMPLETE	
97a		SS		
98	→		RRC CONNECTION REQUEST	Establishment cause: Not checked.
99	←		RRC CONNECTION SETUP	
100	→		RRC CONNECTION SETUP COMPLETE	
101	→		CM SERVICE REQUEST	CKSN = no key available, Mobile identity = TMSI.
102	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
103	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
104		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).
105	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
106	←		RRC CONNECTION SETUP	
107	→		RRC CONNECTION SETUP COMPLETE	
108	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
109		SS	(void)	performs step 14.
109a			(void)	
109b	→		CELL UPDATE	CCCH.
109c	←		RRC CONNECTION RELEASE	CCCH.
109d		SS		performs step 15c.
The following messages are sent and shall be received on cell A.				
110		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).
110a	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
110b	←		RRC CONNECTION SETUP	
110c	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments	
	UE	SS			
110d		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), mobile station classmark 1 as given by the ICS and mobile identity = IMSI. performs step 14. CCCH. CCCH. performs step 15c. See TS 34.108 clause 7.1.2 "Initial UE identity" = IMSI. Establishment Cause: Terminating Conversation Call. "Mobile identity" = IMSI, CKSN = no key available.	
110e		SS			
110f		→	CELL UPDATE		
110g		←	RRC CONNECTION RELEASE		
110h		SS			
111		←	Mobile terminated establishment of Radio Resource Connection		
112		→	PAGING RESPONSE		
113		←	RRC CONNECTION RELEASE		
114		→	RRC CONNECTION RELEASE COMPLETE		
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.

9.4.3.2.5 Test requirement

- 1) At step 13 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key available" and the Location Updating Type IE set to "normal location updating".
- 2)
 - 2.1 At step 40 the UE shall not answer to paging with the previously allocated TMSI.
 - 2.2 At step 43 the UE shall not perform the IMSI detach procedure.
- 3) At step 67 the UE shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
At step 69 the UE shall send an EMERGENCY SETUP message.
- 4) At step 93 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) At step 112 the UE shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.
- 6) At step 110d the UE shall perform a normal location updating procedure.

9.4.3.3 Location updating / abnormal cases / attempt counter equal to 4

9.4.3.3.1 Definition

9.4.3.3.2 Conformance requirement

- 1) When four failures such as cases d) to h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall:
 - 1.1 perform location updating after T3212 expiry by sending a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type set to "normal location updating";

- 1.2 if the T3212 initiated location updating was unsuccessful, then after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 2) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall not perform the IMSI detach procedure, when switched off.
- 3) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE, if it supports speech, shall be able to perform an emergency call i.e. the UE is able to send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI and then send an EMERGENCY SETUP message.
- 4) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:
- 4.1 the UE shall use a request from CM entity for MM connection for a service other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating";
- 4.2 after a location updating triggered by a request from the CM layer which was unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".
- 5) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:
- 5.1 the UE shall perform a normal location updating procedure if it enters a new cell;
- 5.2 if this location updating is unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

References

TS 24.008 clause 4.4.4.9.

9.4.3.3.3 Test purpose

To verify that the UE performs normal location updating procedures after T3212 expiry, when its attempt counter has reached value 4 and that the UE reset its attempt counter after a timer T3212 expiry.

To verify that the UE still follows the MM IDLE state and ATTEMPTING TO UPDATE substate requirements after its attempt counter has reached value 4.

To verify that the attempt counter is reset in the cases where it has to be done.

9.4.3.3.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A and B, belonging to different location areas a and b;
 - IMSI attach/detach is allowed in both cells;
 - T3212 is set to 6 minutes.
- User Equipment:
 - the UE is "Idle updated" on cell B with a valid CKSN and a TMSI.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test Procedure

The UE is made to perform a normal location updating. The SS triggers a failure in this procedure by modifying scrambling code of DL DPCH. After T3211 expiry the UE will try again the location updating procedure. The SS triggers again a failure by modifying it. This is done again 2 times. At this point the attempt counter shall be equal to 4. It is then checked that T3212 has been started and that at its expiry the UE will try a normal location updating procedure. It is verified that the UE has reset its attempt counter after timer T3212 expiry.

Then it is checked that, when the attempt counter has reached the value of 4, the UE is in the MM IDLE state and ATTEMPTING TO UPDATE substate, that is:

- not perform an IMSI detach procedure;
- support request for emergency call;
- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;
- perform normal location updating procedure when a new cell is entered.

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	→		RRC CONNECTION REQUEST	Establishment cause: Registration. <u>If PS mode: a ROUTING AREA UPDATE REQUEST shall be rejected with the same cause as used in the LOCATION UPDATING REJECT.</u>
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6	←		LOCATION UPDATING REJECT	IE Reject cause is set to #22 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
10	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15			(void)	
15a	→		CELL UPDATE	CCCH.
15b	←		RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20	←		AUTHENTICATION REQUEST	
21	→		AUTHENTICATION RESPONSE	Steps 20 and 21 are performed N times. N shall be chosen in such a way that T3210 expires.
22		UE		The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
23	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
26		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
27		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
28		→	RRC CONNECTION RELEASE COMPLETE	The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3212 (tolerance -15s; 45s) at least after the RRC connection is released. If PS mode: a ROUTING AREA UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
29		UE		
30		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
31		←	RRC CONNECTION SETUP	
32		→	RRC CONNECTION SETUP COMPLETE	
33		→	LOCATION UPDATING REQUEST	location updating type: "normal location update" CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
34		←	LOCATION UPDATING REJECT	IE Reject cause = #17 "network failure".
35		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
36		→	RRC CONNECTION RELEASE COMPLETE	The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released. Establishment cause: Registration.
37		UE		
38		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
39		←	RRC CONNECTION SETUP	
40		→	RRC CONNECTION SETUP COMPLETE	
41		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
42		←	AUTHENTICATION REQUEST	CKSN = initial CKSN.
43		→	AUTHENTICATION RESPONSE	
43a		←	SECURITY MODE COMMAND	IE mobile Identity = new TMSI.
43b		→	SECURITY MODE COMPLETE	
44		←	LOCATION UPDATING ACCEPT	
45		→	TMSI REALLOCATION COMPLETE	
46		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
47		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
48		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).
49		→	RRC CONNECTION REQUEST	Establishment cause: Registration. If PS mode: a ROUTING AREA UPDATE REQUEST shall should be rejected with the same cause as used in the LOCATION UPDATING REJECT.
50		←	RRC CONNECTION SETUP	
51		→	RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
52		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
53		←	LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
54		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
55		→	RRC CONNECTION RELEASE COMPLETE	
56	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
57		→	RRC CONNECTION REQUEST	<u>If PS mode: a routing area updating procedure shall should be performed.</u> Establishment cause: Registration.
58		←	RRC CONNECTION SETUP	
59		→	RRC CONNECTION SETUP COMPLETE	
60		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
61	SS			The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
61a			(void)	
61b		→	CELL UPDATE	CCCH.
61c		←	RRC CONNECTION RELEASE	CCCH.
61d	SS			The SS re-modifies the scrambling code of DL DPCH to the original one.
61e	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
62		→	RRC CONNECTION REQUEST	<u>If PS mode: a routing area updating procedure shall should be performed.</u> Establishment cause: Registration.
63		←	RRC CONNECTION SETUP	
64		→	RRC CONNECTION SETUP COMPLETE	
65		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
66		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
67		→	RRC CONNECTION RELEASE COMPLETE	
68	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
69		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
70		←	RRC CONNECTION SETUP	
71		→	RRC CONNECTION SETUP COMPLETE	
72		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
73	SS			performs step 53 and 54.
74	UE			performs step 55. If the UE supports speech, it is made to perform an emergency call.
75		→	RRC CONNECTION REQUEST	Establishment cause: Emergency call.
76		←	RRC CONNECTION SETUP	

Step	Direction		Message	Comments	
	UE	SS			
77	→		RRC CONNECTION SETUP COMPLETE		
78	→		CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.	
79	←		CM SERVICE ACCEPT		
80	→		EMERGENCY SETUP		
81	←		RELEASE COMPLETE	Cause = unassigned number.	
82	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.	
83	→		RRC CONNECTION RELEASE COMPLETE		
84	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. A Detach Request will can be received in PS mode.	
85	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 30 s.	
86	UE			Depending on what has been performed in step 84 the UE is brought back to operation. The subsequent GMM attach shall should be rejected if received in the PS mode.	
87	→		RRC CONNECTION REQUEST	Establishment cause: Registration. location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN. IE mobile Identity = new TMSI. After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell B.	
88	←		RRC CONNECTION SETUP		
89	→		RRC CONNECTION SETUP COMPLETE		
90	→		LOCATION UPDATING REQUEST		
91	←		AUTHENTICATION REQUEST		
92	→		AUTHENTICATION RESPONSE		
92a	←		SECURITY MODE COMMAND		
92b	→		SECURITY MODE COMPLETE		
93	←		LOCATION UPDATING ACCEPT		
94	→		TMSI REALLOCATION COMPLETE		
95	←		RRC CONNECTION RELEASE		
96	→		RRC CONNECTION RELEASE COMPLETE		
The following messages are sent and shall be received on cell A.					
97	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).
98	→		RRC CONNECTION REQUEST		Establishment cause: Registration.
99	←		RRC CONNECTION SETUP		
100	→		RRC CONNECTION SETUP COMPLETE		
101	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.	
102	←		LOCATION UPDATING REJECT	IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.	
103	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.	
104	→		RRC CONNECTION RELEASE COMPLETE		
105	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.	
106	→		RRC CONNECTION REQUEST	Establishment cause: Registration.	
107	←		RRC CONNECTION SETUP		

Step	Direction		Message	Comments
	UE	SS		
108	→		RRC CONNECTION SETUP COMPLETE	
109	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
110		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
111			(void)	
111a	→		CELL UPDATE	CCCH.
111b	←		RRC CONNECTION RELEASE	CCCH.
111c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
111d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
112	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
113	←		RRC CONNECTION SETUP	
114	→		RRC CONNECTION SETUP COMPLETE	
115	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
116	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
117	→		RRC CONNECTION RELEASE COMPLETE	
118		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
119	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
120	←		RRC CONNECTION SETUP	
121	→		RRC CONNECTION SETUP COMPLETE	
122	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
123			(void)	
123a		UE		performs step 61a.
123b	→		CELL UPDATE	CCCH.
123c	←		RRC CONNECTION RELEASE	CCCH.
123d		SS		performs step 61d.
124		UE		A MO CM connection is attempted before T3212 expiry.
125	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
126	←		RRC CONNECTION SETUP	
127	→		RRC CONNECTION SETUP COMPLETE	
128	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
129			(void)	
129a		UE		performs step 61a.
129b	→		CELL UPDATE	CCCH.
129c	←		RRC CONNECTION RELEASE	CCCH.
129d		SS		performs step 61d.
130		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
131	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
132	←		RRC CONNECTION SETUP	
133	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
134		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN. IE mobile Identity = new TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 139 to 143 will be omitted.
135		←	AUTHENTICATION REQUEST	
136		→	AUTHENTICATION RESPONSE	
136a		←	SECURITY MODE COMMAND	
136b		→	SECURITY MODE COMPLETE	
137		←	LOCATION UPDATING ACCEPT	
138		→	TMSI REALLOCATION COMPLETE	
139		←	RRC CONNECTION RELEASE	
140		→	RRC CONNECTION RELEASE COMPLETE	
141		→	RRC CONNECTION REQUEST	
142		←	RRC CONNECTION SETUP	
143		→	RRC CONNECTION SETUP COMPLETE	CKSN = initial value, Mobile identity = TMSI. cause #17 (network failure). The SS waits for the disconnection of the main signalling link.
144		→	CM SERVICE REQUEST	
145		←	CM SERVICE REJECT	
146		←	RRC CONNECTION RELEASE	
147		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
148		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). Establishment cause: Registration.
149		→	RRC CONNECTION REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded. The SS waits for the disconnection of the main signalling link The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released. Establishment cause: Registration.
150		←	RRC CONNECTION SETUP	
151		→	RRC CONNECTION SETUP COMPLETE	
152		→	LOCATION UPDATING REQUEST	
153		←	LOCATION UPDATING REJECT	
154		←	RRC CONNECTION RELEASE	
155		→	RRC CONNECTION RELEASE COMPLETE	
156		UE		
157		→	RRC CONNECTION REQUEST	
158		←	RRC CONNECTION SETUP	
159		→	RRC CONNECTION SETUP COMPLETE	
160		→	LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
161		SS		
162		(void)		CCCH. CCCH. The SS re-modifies the scrambling code of DL DPCH to the original one.
162a		→	CELL UPDATE	
162b		←	RRC CONNECTION RELEASE	
162c		SS		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
162d		UE		

Step	Direction		Message	Comments
	UE	SS		
163	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
164	←		RRC CONNECTION SETUP	
165	→		RRC CONNECTION SETUP COMPLETE	
166	→		LOCATION UPDATING REQUEST	
167	←		RRC CONNECTION RELEASE	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. The SS waits for the disconnection of the main signalling link.
168	→		RRC CONNECTION RELEASE COMPLETE	
169	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
170	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
171	←		RRC CONNECTION SETUP	
172	→		RRC CONNECTION SETUP COMPLETE	
173	→		LOCATION UPDATING REQUEST	
174	←		LOCATION UPDATING REJECT	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI. IE Reject cause = "retry upon entry into a new cell". The SS waits for the disconnection of the main signalling link.
174a	←		RRC CONNECTION RELEASE	
174b	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
175	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).
176	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
177	←		RRC CONNECTION SETUP	
178	→		RRC CONNECTION SETUP COMPLETE	
179	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
180	SS			performs the step 61.
181			(void)	
181a	→		CELL UPDATE	CCCH.
181b	←		RRC CONNECTION RELEASE	CCCH.
181c	SS			The SS re-modifies the scrambling code of DL DPCH to the original one.
181d	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
182	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
183	←		RRC CONNECTION SETUP	
184	→		RRC CONNECTION SETUP COMPLETE	
185	→		LOCATION UPDATING REQUEST	
186	←		AUTHENTICATION REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI. CKSN = initial CKSN.
187	→		AUTHENTICATION RESPONSE	
187a	←		SECURITY MODE COMMAND	IE mobile Identity = new TMSI.
187b	→		SECURITY MODE COMPLETE	
188	←		LOCATION UPDATING ACCEPT	
189	→		TMSI REALLOCATION COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
190		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
191		→	RRC CONNECTION RELEASE COMPLETE	
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.

9.4.3.3.5 Test requirement

- 1) 1.1 At step 33 the UE shall perform location updating procedure.
 - 1.2 At step 41 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".
- 2) At step 85 the UE shall not perform the IMSI detach procedure.
- 3) At step 78 the UE shall send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI.

At step 80 the UE shall send an EMERGENCY SETUP message.
- 4)
 - 4.1 At step 128 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating";
 - 4.2 At step 134 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".
- 5)
 - 5.1 At step 179 the UE shall perform a normal location updating procedure if it enters a new cell;
 - 5.2 At step 185 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

9.4.3.4 Location updating / abnormal cases / attempt counter less or equal to 4, stored LAI equal to broadcast LAI

9.4.3.4.1 Definition

9.4.3.4.2 Conformance requirement

- 1) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a periodic location updating procedure (the broadcast LAI is equal to the stored LAI):
 - 1.1 the UE shall be able to establish an MM connection i.e. send a RRC CONNECTION REQUEST message and then a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;
 - 1.2 then the UE shall not attempt a location updating procedure.

- 2) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during an IMSI attach procedure (the broadcast LAI is equal to the stored LAI):
 - 2.1 the UE shall be able to establish an MM connection i.e. send a RRC CONNECTION REQUEST message and then a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;
 - 2.2 then the UE shall not attempt a location updating procedure.
- 3) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a periodic location updating procedure and the attempt counter is smaller than 4 the UE shall send, after T3211 expiry, a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "periodic updating".
 - 3.1 When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a periodic location updating procedure) after T3212 expiry it shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".
- 4) When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a periodic location updating procedure) it shall use a request for a CM connection other than emergency call as a trigger for a location updating procedure.
- 5) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during an IMSI attach procedure and the attempt counter is smaller than 4 the UE shall send, after T3211 expiry, a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating type set to "IMSI attach".
 - 5.1 When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during an IMSI attach procedure) after T3212 expiry it shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "normal".
- 6) When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during an IMSI attach procedure) it shall use a request for a CM connection other than emergency call as a trigger for a location updating procedure.

References

TS 24.008 clause 4.4.4.9.

9.4.3.4.3 Test purpose

To verify that in the case when the attempt counter is smaller than 4 and the broadcast LAI is equal to the stored LAI, the UE is in the MM IDLE state and NORMAL SERVICE substate. To verify that timer T3211 is stopped after a MM connection establishment.

To verify that the UE uses the T3211 timer, and that it enters the MM IDLE state and NORMAL SERVICE substate when its attempt counter reaches value 4 even in the case where the stored LAI is equal to the broadcast LAI.

9.4.3.4.4 Method of test

Initial conditions

- System Simulator:
 - one cell: B, belonging to location area b;
 - IMSI attach/detach is allowed;
 - T3212 is set to 6 minutes.

- User Equipment:
 - the UE is "Idle updated" on cell B with a valid CKSN and a TMSI.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Test Procedure

A failure during the periodic location updating is triggered: as the broadcast LAI is equal to the stored LAI, the UE is still in the MM IDLE state and NORMAL SERVICE substate and timer T3211 is started. A CM connection other than for emergency call is attempted. It is checked that this is possible and that T3211 is stopped. Same test is performed with a failure during an IMSI attach procedure.

Then failures are triggered during the periodic location updating to let the attempt counter to reach the value of 4. The UE shall enter the MM IDLE state and ATTEMPTING TO UPDATE substate and delete any TMSI, stored LAI, ciphering key sequence number and ciphering key. When the attempt counter reaches the value of 4, timer T3212 shall be started. At timer T3212 expiry a location updating procedure is started. A request for CM connection other than emergency call shall trigger a location updating procedure.

Same tests are performed when the failures are triggered during an IMSI attach procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The SS shall wait at most T3212 + 45 s.
2	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6		SS		location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6a		UE		performs step 6, of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
7		UE		performs step 8 of 9.4.3.2.
8	→		RRC CONNECTION REQUEST	A MO CM connection is attempted before T3211 expiry.
9	←		RRC CONNECTION SETUP	
10	→		RRC CONNECTION SETUP COMPLETE	CKSN = initial CKSN, Mobile Identity = TMSI.
11	→		CM SERVICE REQUEST	
12	←		CM SERVICE ACCEPT	
13	→		An initial CM message	
14	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16		SS		The UE shall not initiate an RRC connection establishment. This is checked during T3211.
17		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. A Detach Request will can be received in PS mode.
Steps 18 to 23 are optional.				
18	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		IMSI DETACH INDICATION	
22	←		RRC CONNECTION RELEASE	

Step	Direction		Message	Comments
	UE	SS		
23	→		RRC CONNECTION RELEASE COMPLETE	
24		UE		Depending on what has been performed in step 17 the UE is brought back to operation. <u>The subsequent GMM attach shall be rejected if received in the PS mode.</u>
25	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	
29		SS		location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2.
29a			(void)	
29b	→		CELL UPDATE	CCCH.
29c	←		RRC CONNECTION RELEASE	CCCH.
29d		SS		performs step 15c of 9.4.3.2.
30		UE		A MO CM connection is attempted before T3211 expiry.
31	→		RRC CONNECTION REQUEST	
32	←		RRC CONNECTION SETUP	
33	→		RRC CONNECTION SETUP COMPLETE	
34	→		CM SERVICE REQUEST	CKSN = initial CKSN, Mobile Identity = TMSI.
35	←		SECURITY MODE COMMAND	
36	→		SECURITY MODE COMPLETE	
37	→		An initial CM message	
38	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
40		SS		The UE shall not initiate an RRC connection establishment. This is checked during T3211 UE is "idle, updated" in cell B.
40/1		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
Steps 40/2 to 40/7 are optional.				
40/2	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
40/3	←		RRC CONNECTION SETUP	
40/4	→		RRC CONNECTION SETUP COMPLETE	
40/5	→		IMSI DETACH INDICATION	
40/6	←		RRC CONNECTION RELEASE	
40/7	→		RRC CONNECTION RELEASE COMPLETE	
40/8		UE		Depending on what has been performed in step 40/1, the UE is brought back to operation. Establishment cause: Registration.
40/9	→		RRC CONNECTION REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. without mobile identity
40/10	←		RRC CONNECTION SETUP	
40/11	→		RRC CONNECTION SETUP COMPLETE	
40/12	→		LOCATION UPDATING REQUEST	
40/13	←		LOCATION UPDATING ACCEPT	
40/14	←		RRC CONNECTION RELEASE	
40/15	→		RRC CONNECTION RELEASE COMPLETE	
41		SS		The SS shall wait at most T3212 + 15 s.
42	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
43	←		RRC CONNECTION SETUP	
44	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
45	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2. CCCH. CCCH. performs step 15c of 9.4.3.2. The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released. Establishment cause: Registration.
46		SS	(void)	
46a			(void)	
46b	→		CELL UPDATE	
46c	←		RRC CONNECTION RELEASE	
46d		SS		
47		UE		
48	→		RRC CONNECTION REQUEST	
49	←		RRC CONNECTION SETUP	
50	→		RRC CONNECTION SETUP COMPLETE	
51	→		LOCATION UPDATING REQUEST	
52		SS		
52a		UE		
53		UE		The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released. Establishment cause: Registration. location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2. CCCH. CCCH. The SS re-modifies the scrambling code of DL DPCH to the original one. The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
54	→		RRC CONNECTION REQUEST	
55	←		RRC CONNECTION SETUP	
56	→		RRC CONNECTION SETUP COMPLETE	
57	→		LOCATION UPDATING REQUEST	
58		SS		
59			(void)	
59a	→		CELL UPDATE	
59b	←		RRC CONNECTION RELEASE	
59c		SS		
59d		UE		
60	→		RRC CONNECTION REQUEST	
61	←		RRC CONNECTION SETUP	
62	→		RRC CONNECTION SETUP COMPLETE	
63	→		LOCATION UPDATING REQUEST	
64		SS		performs step 14 of 9.4.3.2. CCCH. CCCH. performs step 15c of 9.4.3.2. The UE shall not initiate an RRC connection establishment during T3212 seconds at least after the RRC connection is released. Establishment cause: Registration. location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI. CKSN = initial CKSN.
64a			(void)	
64b	→		CELL UPDATE	
64c	←		RRC CONNECTION RELEASE	
64d		SS		
65		UE		
66	→		RRC CONNECTION REQUEST	
67	←		RRC CONNECTION SETUP	
68	→		RRC CONNECTION SETUP COMPLETE	
69	→		LOCATION UPDATING REQUEST	
70	←		AUTHENTICATION REQUEST	

Step	Direction		Message	Comments
	UE	SS		
71	→		AUTHENTICATION RESPONSE	
71a	←		SECURITY MODE COMMAND	
71b	→		SECURITY MODE COMPLETE	
72			(void)	
72a	←		LOCATION UPDATING ACCEPT	IE mobile Identity = TMSI.
72b	→		TMSI REALLOCATION COMPLETE	
73	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
74	→		RRC CONNECTION RELEASE COMPLETE	
75	UE			The UE shall not initiate an RRC connection establishment during than T3212 seconds at least after the RRC connection is released.
76	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
77	←		RRC CONNECTION SETUP	
78	→		RRC CONNECTION SETUP COMPLETE	
79	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
80	SS			performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
80a	UE			performs step 8 of 9.4.3.2.
81	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
82	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
83	←		RRC CONNECTION SETUP	
84	→		RRC CONNECTION SETUP COMPLETE	
85	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
86	SS			performs step 14 of 9.4.3.2.
87			(void)	
87a	→		CELL UPDATE	CCCH.
87b	←		RRC CONNECTION RELEASE	CCCH.
87c	SS			The SS re-modifies the scrambling code of DL DPCH to the original one.
87d	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
88	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
89	←		RRC CONNECTION SETUP	
90	→		RRC CONNECTION SETUP COMPLETE	
91	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
92	SS			performs step 14 of 9.4.3.2.
92a			(void)	
92b	→		CELL UPDATE	CCCH.
92c	←		RRC CONNECTION RELEASE	CCCH.
92d	SS			performs step 15c of 9.4.3.2.
93	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
94	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
95	←		RRC CONNECTION SETUP	
96	→		RRC CONNECTION SETUP COMPLETE	
97	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.

Step	Direction		Message	Comments
	UE	SS		
98		SS		<p>performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.</p> <p>performs step 8 of 9.4.3.2.</p> <p>A MO CM connection is attempted before T3212 expiry. Establishment cause: Registration.</p> <p>location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.</p> <p>IE mobile identity = TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 106 to 110 will be omitted.</p>
98a		UE		
99		UE		
100		→	RRC CONNECTION REQUEST	
101		←	RRC CONNECTION SETUP	
102		→	RRC CONNECTION SETUP COMPLETE	
103		→	LOCATION UPDATING REQUEST	
104		←	LOCATION UPDATING ACCEPT	
105		→	TMSI REALLOCATION COMPLETE	
106		←	RRC CONNECTION RELEASE	
107		→	RRC CONNECTION RELEASE COMPLETE	
108		→	RRC CONNECTION REQUEST	<p>CKSN = no key available, Mobile identity = TMSI cause #17 (network failure).</p>
109		←	RRC CONNECTION SETUP	
110		→	RRC CONNECTION SETUP COMPLETE	
111		→	CM SERVICE REQUEST	
112		←	CM SERVICE REJECT	
113		←	RRC CONNECTION RELEASE	
114		→	RRC CONNECTION RELEASE COMPLETE	
115		UE		<p>If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.</p>
Steps 116 to 121 are optional.				
116		→	RRC CONNECTION REQUEST	<p>Establishment Cause: Detach</p>
117		←	RRC CONNECTION SETUP	
118		→	RRC CONNECTION SETUP COMPLETE	
119		→	IMSI DETACH INDICATION	
120		←	RRC CONNECTION RELEASE	
121		→	RRC CONNECTION RELEASE COMPLETE	
122		UE		<p>Depending on what has been performed in step 115 the UE is brought back to operation.</p> <p>Establishment cause: Registration.</p> <p>location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.</p> <p>performs step 14 of 9.4.3.2.</p> <p>CCCH.</p> <p>CCCH.</p> <p>The SS re-modifies the scrambling code of DL DPCH to the original one.</p> <p>The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.</p> <p>Establishment cause: Registration.</p>
123		→	RRC CONNECTION REQUEST	
124		←	RRC CONNECTION SETUP	
125		→	RRC CONNECTION SETUP COMPLETE	
126		→	LOCATION UPDATING REQUEST	
127		SS		
128		(void)		
128a		→	CELL UPDATE	
128b		←	RRC CONNECTION RELEASE	
128c		SS		
128d		UE		
129		→	RRC CONNECTION REQUEST	
130		←	RRC CONNECTION SETUP	
131		→	RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
132	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
133	←		RRC CONNECTION RELEASE	After the sending of the message the SS waits for the disconnection of the main signalling link.
134	→		RRC CONNECTION RELEASE COMPLETE	
135	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
136	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
137	←		RRC CONNECTION SETUP	
138	→		RRC CONNECTION SETUP COMPLETE	
139	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
140			(void)	
140a	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
140b	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
141	→		RRC CONNECTION RELEASE COMPLETE	
142	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
143	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
144	←		RRC CONNECTION SETUP	
145	→		RRC CONNECTION SETUP COMPLETE	
146	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
147	SS			performs step 14 of 9.4.3.2.
147a			(void)	
147b	→		CELL UPDATE	CCCH.
147c	←		RRC CONNECTION RELEASE	CCCH.
147d	SS			performs step 15c of 9.4.3.2.
148	UE			The UE shall not initiate an RRC connection establishment during T3212 seconds at least after the RRC connection is released.
149	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
150	←		RRC CONNECTION SETUP	
151	→		RRC CONNECTION SETUP COMPLETE	
152	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
153	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
154	→		AUTHENTICATION RESPONSE	
154a	←		SECURITY MODE COMMAND	
154b	→		SECURITY MODE COMPLETE	
155	←		LOCATION UPDATING ACCEPT	IE mobile Identity = TMSI.
156	→		TMSI REALLOCATION COMPLETE	
157	←		RRC CONNECTION RELEASE	
158	→		RRC CONNECTION RELEASE COMPLETE	
159	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.

Steps 160 to 165 are optional.

Step	Direction		Message	Comments
	UE	SS		
160	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
161	←		RRC CONNECTION SETUP	
162	→		RRC CONNECTION SETUP COMPLETE	
163	→		IMSI DETACH INDICATION	
164	←		RRC CONNECTION RELEASE	
165	→		RRC CONNECTION RELEASE COMPLETE	
166		UE		Depending on what has been performed in step 159 the UE is brought back to operation. Establishment cause: Registration.
167	→		RRC CONNECTION REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2.
168	←		RRC CONNECTION SETUP	
169	→		RRC CONNECTION SETUP COMPLETE	
170	→		LOCATION UPDATING REQUEST	
171		SS	(void)	
171a				
171b	→		CELL UPDATE	
171c	←		RRC CONNECTION RELEASE	
171d		SS		
172		UE		
173	→		RRC CONNECTION REQUEST	Establishment cause: Registration. location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2. performs step 8 of 9.4.3.2.
174	←		RRC CONNECTION SETUP	
175	→		RRC CONNECTION SETUP COMPLETE	
176	→		LOCATION UPDATING REQUEST	
177		SS		
177a		UE		
178		UE		
179	→		RRC CONNECTION REQUEST	
180	←		RRC CONNECTION SETUP	
181	→		RRC CONNECTION SETUP COMPLETE	
182	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2.
183		SS	(void)	
184				
184a	→		CELL UPDATE	
184b	←		RRC CONNECTION RELEASE	
184c		SS		
184d		UE		
185	→		RRC CONNECTION REQUEST	
186	←		RRC CONNECTION SETUP	
187	→		RRC CONNECTION SETUP COMPLETE	
188	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI. performs step 14 of 9.4.3.2.
189		SS	(void)	
189a				
189b	→		CELL UPDATE	

Step	Direction		Message	Comments	
	UE	SS			
189c	←		RRC CONNECTION RELEASE	CCCH. performs step 15c of 9.4.3.2. A MO CM connection id attempted before T3212 expiry Establishment cause: Registration. location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI. CKSN = initial CKSN. IE mobile Identity = TMSI. If the location updating type in the LOCATION UPDATING REQUEST contains 'FOR', then IE Follow-on Proceed is included in the ACCEPT and steps 199 to 204 will be omitted.	
189d		SS			
190		UE			
191	→		RRC CONNECTION REQUEST		
192	←		RRC CONNECTION SETUP		
193	→		RRC CONNECTION SETUP COMPLETE		
194	→		LOCATION UPDATING REQUEST		
195	←		AUTHENTICATION REQUEST		
196	→		AUTHENTICATION RESPONSE		
196a	←		SECURITY MODE COMMAND		
196b	→		SECURITY MODE COMPLETE		
197	←		LOCATION UPDATING ACCEPT		
198	→		TMSI REALLOCATION COMPLETE		
199	←		RRC CONNECTION RELEASE		
200	→		RRC CONNECTION RELEASE COMPLETE		
201			(void)		
202	→		RRC CONNECTION REQUEST		CKSN = initial value, Mobile identity = TMSI. cause #17 (network failure).
203	←		RRC CONNECTION SETUP		
204	→		RRC CONNECTION SETUP COMPLETE		
205	→		CM SERVICE REQUEST		
206	←		CM SERVICE REJECT		
207	←		RRC CONNECTION RELEASE		
208	→		RRC CONNECTION RELEASE COMPLETE		

Specific message contents

None.

9.4.3.4.5 Test requirement

1)

1.1 At step 8 the UE shall send a RRC CONNECTION REQUEST message and at step 11 the UE shall send a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

1.2 At step 11 the UE shall not attempt a location updating procedure.

2)

2.1 At step 31 the UE shall send a RRC CONNECTION REQUEST message and at step 34 the UE shall send a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

2.2 At step 39 the UE shall not attempt a location updating procedure.

3) At step 51 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "periodic updating".

3.1 At step 69 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".

4) At step 103 the UE shall send a LOCATION UPDATING REQUEST message.

5) At step 132 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "IMSI attach".

5.1 At step 152 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".

6) At step 194 the UE shall send a LOCATION UPDATING REQUEST message.

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 shall 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.

9.4.4 Location updating / release / expiry of T3240

9.4.4.1 Definition

9.4.4.2 Conformance requirement

The UE receiving a LOCATION UPDATING ACCEPT message shall start T3240: it shall abort the RR connection at the expiry of timer T3240.

References

TS 24.008 clauses 4.4.4.8 and 11.2.

9.4.4.3 Test purpose

To verify that the UE aborts the RR-connection at the expiry of timer T3240.

9.4.4.4 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

A normal location updating procedure is performed. The RR-connection is not released by the SS within the timer T3240. It is checked that the UE aborts the RR-connection.

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 1)
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 shall should be performed.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
5a		SS		The SS starts integrity protection.
6	←		LOCATION UPDATING ACCEPT	
7		SS		The SS waits T3240 expiry.
8	→		SIGNALLING CONNECTION RELEASE INDICATION	The UE shall abort the RR connection. (see note 2) CN domain identity = CS domain
9		SS		The SS releases the RRC connection.
10			Void	Send only if RRC Connection Release is send.
NOTE1: 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".				
NOTE2: At the expiration of T3240, as per TS 24.008, RR connection shall be aborted. In UMTS, UE cannot release RRC connection on its own. Instead, UE can abort the RR connection ("CS signalling connection") and send a Signalling Connection Release Indication to the UTRAN, in order to initiate the release of RRC connection.				

Specific message contents

None.

9.4.4.5 Test requirement

At step 10 the UE shall abort the RRC connection.

9.4.5 Location updating / periodic

9.4.5.1 Location updating / periodic spread

9.4.5.1.1 Definition

9.4.5.1.2 Conformance requirement

- 1) The UEs shall perform spreading of the time before performing a periodic location updating when the location updating timer value is reduced.
- 2) The UE shall reset timer T3212 when the UE is deactivated, and shall start with a value between zero and the broadcasted value when reactivated in the same cell, IMSI attach being forbidden.
- 3) When activated the UE shall start timer T3212 with a value randomly drawn in the allowed range.

NOTE: This conformance requirement is not covered by a test purpose. It is intended to be covered by a manufacturer declaration.

References

TS 24.008 clause 4.4.2.

9.4.5.1.3 Test purpose

- 1) To check that when the location updating timer is reduced, the timer running in the UE is started with a value depending on the current timer value and the new broadcasted T3212 value.
- 2) To verify that when the UE is reactivated in the same cell (as the one in which it was deactivated), IMSI attach being forbidden, the UE starts the timer T3212 with a value between zero and the broadcasted value.

NOTE: It is not tested that the value is random.

9.4.5.1.4 Method of test

Initial conditions

- System Simulator:
 - one cell, T3212 is set to 30 minutes;
 - IMSI attach is allowed in the cell;
- User Equipment:
 - the UE is deactivated. The stored MCC, MNC and LAC correspond to the broadcasted values. The stored update status is "updated".

Related ICS/IXIT statements

None.

Test procedure

The UE is activated. It performs IMSI attach. 3 minutes after the end of the IMSI attach procedure, the value of T3212 is set to 6 minutes. The UE shall perform periodic location updating 6 minutes after the end of the IMSI attach procedure.

Then, the IMSI attach/detach is forbidden. T3212 is still set to 6 minutes.

The UE is deactivated. The UE is reactivated. It is checked that the UE performs a periodic location updating during the 6 minutes following activation.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		The UE is activated.
2		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
3		←	RRC CONNECTION SETUP	
4		→	RRC CONNECTION SETUP COMPLETE	
5		→	LOCATION UPDATING REQUEST	"location updating type": IMSI attach.
6		←	LOCATION UPDATING ACCEPT	
7		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8		→	RRC CONNECTION RELEASE COMPLETE	
9		SS		3 minutes after step 8 the value of T3212 is set to 6 minutes.
10		→	RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall be sent by the UE between 5 minutes 45 s and 6 minutes 15 s after step 8.
11		←	RRC CONNECTION SETUP	
12		→	RRC CONNECTION SETUP COMPLETE	
13		→	LOCATION UPDATING REQUEST	"location updating type": periodic updating.
14		←	LOCATION UPDATING ACCEPT	
15		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
16		→	RRC CONNECTION RELEASE COMPLETE	
17		SS		IMSI attach/detach is not allowed.
18		UE		The UE is deactivated.
19		UE		The UE is activated.
20		SS		The SS waits until the periodic location updating.
21		→	RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive during the 6 minutes following the UE activation.
22		←	RRC CONNECTION SETUP	
23		→	RRC CONNECTION SETUP COMPLETE	
24		→	LOCATION UPDATING REQUEST	"Location updating type" = periodic.
25		←	LOCATION UPDATING ACCEPT	
26		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
27		→	RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.4.5.1.5 Test requirement

At step 10 the UE shall send an RRC CONNECTION REQUEST for a periodic location updating.

At step 21 the UE shall send an RRC CONNECTION REQUEST for a periodic location updating.

9.4.5.2 Location updating / periodic normal / test 1

9.4.5.2.1 Definition

9.4.5.2.2 Conformance requirement

- 1 The UE shall stop and reset the timer T3212 of the periodic location updating procedure when the first MM message is received or SECURITY mode setting is completed in the case of MM connection establishment.
- 2 The UE shall stop and reset the timer T3212 of the periodic location updating procedure when the UE has responded to paging and thereafter has received the first correct L3 message that is not an RRC message.

References

TS 24.008 clause 4.4.2.

9.4.5.2.3 Test purpose

To verify that the UE stops and resets the timer T3212 of the periodic location updating procedure when:

- the first MM-message is received in the case of MM-connection establishment, security mode being not set;
- the UE has responded to paging and the first correct L3 message that is not an RRC message is received.

NOTE: T3212 is stopped when the MM-idle state is left and restarted when the MM sublayer returns to that state, substate NORMAL SERVICE or ATTEMPTING TO UPDATE. As a consequence, the exact time when T3212 is reset between those two events cannot be tested.

9.4.5.2.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters;
 - IMSI attach/detach is not allowed;
 - the T3212 time-out value is 2/10 hour.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test procedure

An UE originated MM connection is established and cleared. The RRC CONNECTION is released. It is checked that the UE performs a periodic location updating 12 minutes after the release of the RRC CONNECTION.

One minute after the periodic location updating, the UE is paged, it sends a RRC CONNECTION REQUEST message and the SS responds with an RRC CONNECTION SETUP message, a call is established and then cleared. It is checked that the UE performs a periodic location updating 12 minutes after the release of the link.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		A MO CM connection is attempted.
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE REJECT	cause #17 (network failure).
7		SS		The SS releases the RRC connection.
8			Void	
9		SS		The SS waits until the periodic location updating.
10		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message shall arrive between 11 minutes 45 s and 12 minutes 15 s after the last release of the RRC connection by the SS.
11			Void	
12			Void	
13	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
14	←		LOCATION UPDATING ACCEPT	
15		SS		The SS releases the RRC connection.
16			Void	
17		SS		The SS waits 1 minute.
18	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Mobile identity" = IMSI. "Establishment cause": Terminating Conversational Call.
19	→		PAGING RESPONSE	
20	←		AUTHENTICATION REQUEST	
21	→		AUTHENTICATION RESPONSE	
22		SS		The SS releases the RRC connection.
23			Void	
24		SS		The SS waits until the periodic location updating.
25		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message shall arrive between 11 minutes 45 s and 12 minutes 15 s after the last release of the RRC connection by the SS.
26			Void	
27			Void	
28	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
29	←		LOCATION UPDATING ACCEPT	
30		SS		The SS releases the RRC connection.
31			Void	

Specific message contents

None.

9.4.5.2.5 Test requirement

At step 10 the UE shall initiate an RRC CONNECTION REQUEST 12 minutes after the release of the RRC CONNECTION (at step 7).

At step 25 the UE shall initiate an RRC CONNECTION REQUEST 12 minutes after the release of the RRC CONNECTION (at step 22).

9.4.5.3 Location updating / periodic normal / test 2

9.4.5.3.1 Definition

9.4.5.3.2 Conformance requirement

When a LOCATION UPDATING ACCEPT or a LOCATION UPDATING REJECT message is received, the timer T3212 is stopped and reset and the UE shall perform a periodic location updating after T3212 expiry.

References

TS 24.008 clause 4.4.2.

9.4.5.3.3 Test purpose

To verify that the UE stops and resets the timer T3212 of the periodic location updating procedure when a LOCATION UPDATING ACCEPT message is received.

NOTE: T3212 is stopped when the MM-idle state is left and restarted when the MM sublayer returns to that state, substate NORMAL SERVICE or ATTEMPTING TO UPDATE. As a consequence, the exact time when T3212 is reset between those two events cannot be tested.

9.4.5.3.4 Method of test

Initial conditions

- System Simulator:
 - 2 cells, IMSI attach/detach is allowed in both cells;
 - T3212 is set to 6 minutes;
 - two cells: A and B of the same PLMN, belonging to different location areas with LAI a and b.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated" on cell A.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button yes/No.

Test procedure

A normal location updating is performed. The RRC CONNECTION is released. One minute later, the UE is deactivated, then reactivated in the same cell. It is checked that the UE performs an IMSI attach and a periodic location updating 6 minutes after the IMSI attach.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell B. 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". <u>If PS mode: a routing area updating procedure shall should be performed.</u>
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	"location updating type" = normal.
5a		SS		The SS starts integrity protection.
6		←	LOCATION UPDATING ACCEPT	
7		SS		The SS releases the RRC connection.
8			Void	
9		SS		The SS waits until the periodic location updating.
10		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message shall arrive between 5 minutes 45s and 6 minutes 15 s after the last release of the RRC connection by the SS.
11			Void	
12			Void	
13		→	LOCATION UPDATING REQUEST	"Location updating type" = periodic.
14		←	LOCATION UPDATING ACCEPT	
15		SS		The SS releases the RRC connection.
16			Void	
17		UE		If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. <u>A Detach Request will can be received in PS mode.</u> steps 18 to 23 may be performed or not depending on the action made in step 17.
18		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
19			Void	
20			Void	
21		→	IMSI DETACH INDICATION	
22		SS		The SS releases the RRC connection.
23			Void	
24		UE		Depending on what has been performed in step 17 the UE is brought back to operation. <u>The subsequent GMM attach shall should be rejected if received in the PS mode.</u>
25		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
26			Void	
27			Void	
28		→	LOCATION UPDATING REQUEST	"Location updating type" = IMSI attach.
28a		SS		The SS starts integrity protection.
29		←	LOCATION UPDATING ACCEPT	
30		SS		The SS releases the RRC connection.
31			Void	
32		SS		The SS waits until the periodic location updating.

Step	Direction		Message	Comments
	UE	SS		
33		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message shall arrive between 5 minutes 45 s and 6 minutes 15s after the last release of the RRC connection by the SS.
34			Void	
35			Void	
36		→	LOCATION UPDATING REQUEST	"Location updating type" = periodic.
37		←	LOCATION UPDATING ACCEPT	
38		SS		The SS releases the RRC connection.
39			Void	
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.

9.4.5.3.5 Test requirement

After step 28 the UE shall performs an IMSI attach.

After step 33 the UE shall performs periodic location updating 6 minutes after step 28.

9.4.5.4 Location updating / periodic search for HPLMN or higher priority PLMN when in VPLMN

9.4.5.4.1 Location updating / periodic search for HPLMN or higher priority PLMN / UE waits time T

9.4.5.4.1.1 Definition

9.4.5.4.1.2 Conformance requirement

1. In the case that the mobile has a stored "Equivalent PLMNs" list the mobile shall only select a PLMN if it is of a higher priority than those of the same country as the current serving PLMN which are stored in the "Equivalent PLMNs" list.
2. In steps i), ii) and iii) of the Automatic Network Selection Mode Procedure, the MS shall limit its attempts to access higher priority PLMNs to PLMNs of the same country as the current serving VPLMN;
3. If the MS is in idle mode in a VPLMN, the MS shall periodically attempt to obtain service on its HPLMN or higher priority PLMN listed in "user controlled PLMN selector" or "operator controlled PLMN selector". The MS shall make an attempt if the MS is on the VPLMN at time T after the last attempt.

References

TS 22.011 clause 3.2.2.5. and TS 23.122 4.4.3.3.

9.4.5.4.1.3 Test purpose

To verify that if a UE is camped on a VPLMN it will perform a search for higher priority networks (e.g HPLMN) with a periodicity of T, which is the Search Period stored in the USIM.

This test will confirm that, if a cell from a new PLMN becomes available, within a time T the UE will perform a location updating on it only if the following requirements are met:

- The PLMN of this new cell if from the same country as the VPLMN, and
- This PLMN is the HPLMN stored in the USIM, or has a higher priority than the serving VPLMN or any PLMN from the country of the VPLMN that is stored in the equivalent PLMN list.

9.4.5.4.1.4 Method of test

Initial conditions

- System Simulator:
 - four cells A, B, C and D, belonging to different location areas with location identification a, b, c and d. Their country codes and mobile network codes are defined as follows:

Cell	MCC	MNC
A	001	001
B	022	002
C	001	010
D	001	100

Initially Cells A, B and C shall not be broadcasting. IMSI attach/detach is not allowed on any of other cells.

- User Equipment:
 - the UE is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".
 - The following USIM fields are configured:

USIM field	Priority	PLMN
EF _{HPLMNwAcT}	1 st	A
EF _{PLMNwAcT}	1 st	B
	2 nd	E
EF _{OPLMNwAcT}	1 st	C
	2 nd	D

In the table PLMN X is the PLMN code from cell X (see above). PLMN E is defined as MCC=001, MNC=030.

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell D shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell D. The SS shall include the PLMN E in the list of equivalent PLMNs that is sent in the Location Update Accept message. Cells B and C shall be made available after 7 minutes from switched on, thus ensuring the UE fails to find any higher priority PLMN during its first attempt. It is verified that the UE does not perform a location update request on Cell B or C (waiting for at least 6 minutes after broadcasting of Cells B and C). Then Cell A is also made available, and it is verified that the UE performs a location update request on Cell A within 6 minutes after broadcasting of Cell A.

Expected sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell D. 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 "non-suitable cell". Set the cell type of Cell D to the "Suitable neighbour cell". (see note)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	"Location Update Type": Normal.
5a		SS		The SS starts integrity protection.
6		←	LOCATION UPDATING ACCEPT	"Equivalent PLMNs": PLMN E
7		SS		The SS releases the RRC connection.
8			Void	
8a		SS		The SS waits a period of 7 minutes after the UE is switched on, this allowing the UE to make its first periodic search.
8b		SS		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)
8c		SS		The SS shall wait for 7 minutes during which no messages should be received.
9		SS		Set the cell type of cell A to the "Suitable neighbour cell". (see note) If PS mode: a routing area updating procedure shall should be performed.
10		SS		Within 6 minutes after step 9, the following messages shall be sent and received on Cell A. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
11			Void	
12			Void	
13		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
13a		SS		The SS starts integrity protection.
14		←	LOCATION UPDATING ACCEPT	
15		SS		The SS releases the RRC connection.
16			Void	
NOTE:	The definitions for "Suitable neighbour 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.

9.4.5.4.1.5 Test requirement

1. At step 8c, the UE shall not send any LOCATION UPDATING REQUEST on cell C.
2. At step 8c, the UE shall not send any LOCATION UPDATING REQUEST on cell B.
3. At step 13 the UE shall send a LOCATION UPDATING REQUEST message on Cell A.

9.4.5.4.2 Location updating / periodic search for HPLMN or higher priority PLMN / UE in manual mode

9.4.5.4.2.1 Definition

9.4.5.4.2.2 Conformance requirement

The periodic attempts shall only be performed if in automatic mode when the UE is in a VPLMN.

References

TS 22.011 clause 3.2.2.5. and TS 23.122 clause 4.4.3.3.

9.4.5.4.2.3 Test purpose

To verify that no Search for HPLMN or Higher Priority PLMN is performed when the UE is not in automatic mode.

9.4.5.4.2.4 Method of test

Initial conditions

- System Simulator:
 - two cells A and B, belonging to different location areas with location identification a and b. Cell A shall be a cell of the HPLMN and Cell B shall be a cell of the VPLMN with a Country Code the same as that of Cell A. Initially Cell A shall not be broadcasting. IMSI attach/detach is not allowed on either cell.
- 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 is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell B shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell B. The UE is forced into manual selection mode. Cell A is made available. It is verified that the UE does not attempt to perform a location update on Cell A.

Expected sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and 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)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location Update Type": Normal.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	UE			The UE is forced into manual selection mode.
10	SS			Set the cell type of cell A to the "Suitable neighbour cell". (see note) If PS mode: a routing area updating procedure shall be performed.
11	SS			The SS waits a period of 6 minutes. During this time no messages shall be received on Cell A.
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.5.4.2.5 Test requirement

At step 11 the UE shall not attempt to perform a location update.

9.4.5.4.3 Location updating / periodic search for HPLMN or higher priority PLMN / UE waits at least two minutes and at most T minutes

9.4.5.4.3.1 Definition

9.4.5.4.3.2 Conformance requirement

After switch on, the UE waits at least 2 minutes and at most T minutes before the first Search for HPLMN or higher priority PLMN is attempted.

References

TS 22.011 clause 3.2.2.5. and TS 23.122 4.4.3.3.

9.4.5.4.3.3 Test purpose

To verify that the UE waits at least 2 minutes and at most T minutes before attempting its first Search for HPLMN or higher priority PLMN.

9.4.5.4.3.4 Method of test

Initial Conditions

- System Simulator:
 - two cells A and B, belonging to different location areas with location identification a and b. Cell A shall be a cell of the HPLMN and Cell B shall be a cell of the VPLMN with a Country Code the same as that of Cell A. Initially Cell A shall not be broadcasting. IMSI attach/detach is not allowed on either cell.
- 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 is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell B shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell B. Cell A is made available. It is verified that the UE attempts to perform a location update on Cell A, after at least 2 minutes and at most T minutes have passed following power on.

Expected sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and 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)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location Update Type": Normal.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		Set the cell type of cell A to the "Suitable neighbour cell". (see note)
10		SS		If PS mode: a routing area updating procedure shall should be performed. The SS waits a period of 2 minutes after the UE is switched on. During this time no messages shall be received on Cell A. The following messages shall be sent and received on cell A. Within 6 minutes after the UE is switched on the following messages shall be sent and received on cell A.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall be sent between 2 and 6 minutes after step 1
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
15	←		LOCATION UPDATING ACCEPT	
16	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.5.4.3.5 Test requirement

At step 11 the UE shall attempt to perform a location update.

9.4.6 Location updating / interworking of attach and periodic

9.4.6.1 Definition

9.4.6.2 Conformance requirement

- 1) If the UE is in service state NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH or PLMN SEARCH-NORMAL SERVICE when the timer T3212 expires the location updating procedure is delayed until this service state is left.

- 2) The T3212 time-out value shall not be changed in the NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH and PLMN SEARCH-NORMAL SERVICE states.
- 3) If the selected cell is in the location area where the UE is registered and IMSI ATTACH is not required and timer T3212 has not expired, then the state is NORMAL SERVICE.

References

- 1) TS 24.008 clause 4.4.2.
- 2) TS 24.008 clause 4.4.2.
- 3) TS 24.008 clause 4.2.1.1.

9.4.6.3 Test purpose

- 1) To check that if the PLU timer expires while the UE is out of coverage, the UE informs the network of its return to coverage.
- 2) To check that the PLU timer is not disturbed by cells of forbidden PLMNs.
- 3) To check that if the PLU timer does not expire while out of coverage and if the mobile returns to the LA where it is updated, the UE does not inform the network of its return to coverage.

9.4.6.4 Method of test

Initial conditions

- System Simulator:
 - two cells, a and b, of different PLMNs;
 - T3212 is set to 12 minutes on cell a;
 - T3212 is set to 6 minutes on cell b;
 - IMSI attach is allowed 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 is deactivated. The PLMN of cell b is entered in the USIM's forbidden PLMN list.

Related ICS/IXIT statements

None.

Test procedure

The UE is activated and placed in automatic network selection mode. It performs IMSI attach. 1 minute after the end of the IMSI attach procedure, cell a is made unavailable. The UE shall not location update on cell b. 8 minutes after the end of the IMSI attach procedure, cell a is made available. The UE shall not location update on cell a before 11,75 minutes after the end of the IMSI attach procedure. The UE shall perform a periodic location update on cell a between 11,75 minutes and 12,25 minutes after the end of the IMSI attach procedure.

3 minutes after the end of the periodic location updating procedure, cell a is made unavailable. The UE shall not location update on cell b. 14 minutes after the end of the periodic location updating procedure, cell a is made available and cell b is made unavailable. The UE shall perform a location update on cell a before 17 minutes after the end of the periodic location updating 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 "Suitable neighbour cell". (see note)
1a	UE			The UE is activated in automatic network selection mode.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type": IMSI attach.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	SS			The SS waits 1 minute after step 8. Set the cell type of cell A to the "non-suitable cell". (see note)
10	SS			The SS waits 8 minutes after step 8. Set the cell type of cell A to the "Serving cell". (see note)
11	→		RRC CONNECTION REQUEST	This message shall be sent by the UE between 11 minutes 45s and 12 minutes 15s after step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"location updating type": periodic.
15	←		LOCATION UPDATING ACCEPT	
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
18	SS			The SS waits 3 minutes after step 17. Set the cell type of cell A to the "non-suitable cell". (see note)
19	SS			The SS waits 14 minutes after step 17. 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)
20	→		RRC CONNECTION REQUEST	This message shall be sent by the UE before 17 minutes after step 17.
21	←		RRC CONNECTION SETUP	
22	→		RRC CONNECTION SETUP COMPLETE	
23	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
24	←		LOCATION UPDATING ACCEPT	
25	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
26	→		RRC CONNECTION RELEASE COMPLETE	
27	UE			The UE shall not initiate an RRC connection establishment. This is checked during 12 minutes.
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.6.5 Test requirement

- 1) At step 20 the UE shall send an RRC CONNECTION REQUEST and at step 23 the UE shall attempt to perform a location update.
- 2) At step 11 the UE shall send an RRC CONNECTION REQUEST and at step 14 the UE shall attempt to perform a location update.
- 3) At step 27 the UE shall not initiate an RRC connection during 12minutes.

9.4.7 Location Updating / accept with replacement or deletion of Equivalent PLMN list

9.4.7.1 Definition

Test to verify that the UE replaces or deletes its stored Equivalent PLMN list when no Equivalent PLMN list is included in the LOCATION UPDATING ACCEPT message from the network during a Location Update.

9.4.7.2 Conformance requirement

- 1) The stored list in the mobile station shall be replaced on each occurrence of the LOCATION UPDATING ACCEPT message.
- 2) If no equivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message, then the stored equivalent PLMN list in the mobile station shall be deleted.

References

TS 24.008 4.4.4.6

9.4.7.3 Test purpose

- 1) To verify that the UE replaces its stored equivalent PLMN list if the equivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message received from the network during a location updating procedure.
- 2) To verify that the UE deletes its stored equivalent PLMN list if no equivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message received from the network during a location updating procedure.

9.4.7.4 Method of test

Initial conditions:

- System Simulator:
 - two cells: A and B, with different PLMN Codes (PLMN 1 and PLMN 2 respectively).
- 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 is switched off. The HPLMN is PLMN 3 and no other information about PLMN priorities or forbidden PLMNs is stored in the USIM. The equivalent PLMN list in the mobile station is empty.
 - the UE is "Idle updated" on cell B.

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

When the UE is initially switched on it will perform a normal location updating in Cell A, which is the only suitable cell available. The LOCATION UPDATING ACCEPT message sent by the SS on reception of the LOCATION UPDATING REQUEST message shall include PLMN 2 in the equivalent PLMN list. When Cell B is made available and its RF signal level is higher than that of Cell A the UE will perform a normal location updating in this cell. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN 1 in the equivalent PLMN list. When Cell B is made unavailable the UE shall perform a normal location updating again in Cell A, but in this occasion the LOCATION UPDATING ACCEPT message shall contain an empty equivalent PLMN list. When Cell B is made available again and its RF signal level is higher than that of Cell A the UE shall not perform a normal location updating in this cell since it is not in the ePLMN list.

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Suitable neighbour cell". Set the cell type of Cell B to the "non-suitable cell". (see note)
2	UE			The UE is switched on by either using the Power Switch or by applying power. If PS mode: a routing area updating procedure shall should be performed.
3		SS	RRC CONNECTION REQUEST	The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
4			Void	
5			Void	
6	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
6a		SS		The SS starts integrity protection.
7	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs: PLMN 2
8		SS		The SS releases the RRC connection.
9			Void	
10		SS		The following messages shall be sent and received on Cell B. Set the cell type of Cell B to the "Serving cell". (see note) If PS mode: a routing area updating procedure shall should be performed.
11		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
12			Void	
13			Void	
14	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
14a		SS		The SS starts integrity protection.
15	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs : PLMN 1
16		SS		The SS releases the RRC connection.
17			Void	
18		SS		The following messages shall be sent and received on Cell A. Set the cell type of Cell B to the "non-suitable cell". (see note) If PS mode: a routing area updating procedure shall should be performed.
19		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20			Void	
21			Void	
22	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
22a		SS		The SS starts integrity protection.
23	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs : empty
24		SS		The SS releases the RRC connection.
25			Void	
26		SS		Set the cell type of Cell B to the "Serving cell". (see note)
27		SS		The SS shall wait for 7 minutes during which no messages should be received.
NOTE:	The definitions for "Serving cell", "Suitable neighbour 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.

9.4.7.5 Test requirements

- 1) At step 14 the UE shall perform a normal location updating in Cell B.
- 2) At step 27 the UE shall not perform a normal location updating in Cell B.

9.4.8 Location Updating after UE power off

9.4.8.1 Definition

Test to verify that the UE stores the equivalent PLMN list at UE power off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.2 Conformance requirement

The equivalent PLMN list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.

References

TS 24.008 4.4.4.6

9.4.8.3 Test purpose

To verify that the UE stores the equivalent PLMN list at UE switch off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.4 Method of test

Initial conditions

- System Simulator:
 - three cells: A, B and C. Cell A belongs to PLMN1 which is HPLMN. Cell B belongs to PLMN2. Cell C belongs to PLMN3.
- 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 is switched off;
 - the UE is in automatic mode for PLMN selection,
 - 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}	1 st	PLMN 1
EF _{PLMNwAcT}	Empty	
EF _{OPLMNwAcT}	1 st	PLMN 3
	2 nd	PLMN 2

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

When the UE is initially switched on it will perform a normal location updating in Cell A, which is the only suitable cell available and belongs to the HPLMN. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN2 in the equivalent PLMN list. The UE shall be switched-off. Cell A shall be made unavailable and Cells B and C shall be made available. When the UE is switched-on again, the UE shall perform a normal location updating in Cell B and not in Cell C because PLMN2 is stored in the UE equivalent PLMN list.

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Serving cell". Set the cell type of Cell B and Cell C to the "non-suitable cell". (see note)
2	UE			The UE is switched on by either using the Power Switch or by applying power.
3		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4			Void	
5			Void	
6		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
6a		SS		The SS starts integrity protection.
7		←	LOCATION UPDATING ACCEPT	Equivalent PLMN List: PLMN 2
8		SS		The SS releases the RRC connection.
9		UE		If possible (see ICS) switch off is performed. Otherwise the power is removed. Steps 9a to 9c may be performed or not depending on the action made in step 9. A Detach Request will can be received in PS mode.
9a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
9b		→	IMSI DETACH INDICATION	
9c		SS		The SS releases the RRC connection.
10			Void	The following messages shall be sent and 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 "suitable neighbour cell". Set the cell type of Cell C to the "suitable neighbour cell". (see note)
12	UE			Depending on what has been performed in step 9 the UE is brought back to operation. The subsequent GMM attach shall should be rejected if received in the PS mode.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
16a		SS		The SS starts integrity protection.
17		←	LOCATION UPDATING ACCEPT	
18		SS		The SS releases the RRC connection.
19			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.8.5 Test requirements

At step 16 the UE shall perform a normal location updating in Cell B.

9.4.9 Location Updating / Accept, Interaction between Equivalent PLMNs and Forbidden PLMNs.

9.4.9.1 Definition

Test to verify that, before storing the 'equivalent PLMN list' received from the network during a Location Update, the UE removes any PLMN already included in the 'forbidden PLMN list'. Consequently the UE shall not select a PLMN Equivalent to the registered PLMN if it is included in the 'forbidden PLMN list' in the USIM.

9.4.9.2 Conformance requirement

The mobile station shall store the equivalent PLMS list, as provided by the network, except that any PLMN code that is already in the "forbidden PLMN list" shall be removed from the "equivalent PLMNs" list before it is stored by the mobile station.

References

TS 24.008, 4.4.4.6

9.4.9.3 Test purpose

To verify that the UE shall not select a forbidden PLMN even though it is included in the equivalent PLMN list provided by the network because forbidden PLMNs shall not be stored in the mobile's equivalent PLMN list.

9.4.9.4 Method of test

Initial conditions

- System Simulator:
 - two cells: A, and B. Cell A belongs to PLMN1. Cell B belongs to PLMN2.
 - 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 is switched off;
 - the UE is in automatic PLMN selection mode.
 - 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}	1 st	PLMN 3
EF _{PLMNwAcT}	1 st	PLMN 2
EF _{FPLMN}		PLMN 2

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

Cells A and B are made available. When the UE is switched-on it will perform a normal location updating in Cell A, since Cell B belongs to a forbidden PLMN. The SS will respond sending a LOCATION UPDATING ACCEPT message that includes PLMN2 in the equivalent PLMN list. However the UE shall not store PLMN 2 in its equivalent PLMN list as it is a forbidden PLMN. Therefore, when Cell A is made unavailable the UE will not select the only remaining cell (Cell B), remaining in limited service state.

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Suitable neighbour cell". Set the cell type of Cell B to the "Suitable neighbour cell". (see note) The UE is switched on by either using the Power Switch or by applying power. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". "Location Update Type": normal. The SS starts integrity protection. Equivalent PLMN List: PLMN 2 The SS releases the RRC connection.
2	UE			
3		SS		
4			Void	
5			Void	
6		→	LOCATION UPDATING REQUEST	
6a		SS		
7	←		LOCATION UPDATING ACCEPT	
8		SS		
9			Void	
10		SS		Set the cell type of Cell A to the "non-suitable cell". (see note)
11		SS		The SS shall wait for 7 minutes during which no messages should be received.
NOTE: The definitions for "Suitable neighbour 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.

9.4.9.5 Test requirements

At step 11 the UE shall not perform a normal location updating in Cell B.

9.5 MM connection

9.5.1 Introduction

[tbd]

9.5.2 MM connection / establishment in security mode

9.5.2.1 Definition

9.5.2.2 Conformance requirement

- 1) The UE shall be able to correctly set up an MM connection in a Mobile Originating CM connection attempt and send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to the TMSI.
- 2) The UE shall be able to interpret security mode setting as acceptance of its CM service request i.e. send a CM message.

References

TS 24.008 clause 4.5.1.1.

9.5.2.3 Test purpose

To verify that the UE can correctly set up an MM connection in an origination and interpret security mode setting as acceptance of its CM service request.

9.5.2.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is initiated. After the UE has sent the CM SERVICE REQUEST message to the SS, an authentication procedure and a security mode setting procedure are performed. Then, the UE sends a CM message and the SS clears the call and releases the RRC CONNECTION.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE		Void Void Void CM SERVICE REQUEST AUTHENTICATION REQUEST AUTHENTICATION RESPONSE Void	A MO CM connection is attempted.
2				
3				
4				
5	→			
6	←			
7	→			
8	SS			
9				
A10	→		SETUP	"Cause" IE: "unassigned number".
A11	←		RELEASE COMPLETE	
B10	→		REGISTER	
B11	←		RELEASE COMPLETE	
C10	→		CP-DATA	
C11	←		CP-ACK	
C12	←		CP-DATA	
C13	→		CP-ACK	
14	SS			The SS releases the RRC connection.
15			Void	

Specific message contents

None.

9.5.2.5 Test requirement

At step 5 the UE shall send the CM SERVICE REQUEST message to the SS.

At step A10 or B10 or C10 the UE shall send a CM message and the SS shall release the RRC connection (step 14).

9.5.3 Void

9.5.4 MM connection / establishment rejected

9.5.4.1 Definition

9.5.4.2 Conformance requirement

If a CM SERVICE REJECT message is received by the mobile station, timer T3230 shall be stopped, the requesting CM sublayer entity informed. Then the mobile station shall proceed as follows:

- If the cause value is not #4 or #6 the MM sublayer returns to the previous state (the state where the request was received). Other MM connections shall not be affected by the CM SERVICE REJECT message.

References

TS 24.008 clause 4.5.1.1.

9.5.4.3 Test purpose

To verify that the UE stops timer T3230, informs the requesting CM sublayer entity and returns to the previous state.

9.5.4.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS responds with a CM SERVICE REJECT message with reject cause "requested service option not subscribed". It is checked that the UE does not send a layer 3 message via the rejected MM connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		A MO CM connection is attempted
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	A mobile originating CM connection is attempted
6	←		CM SERVICE REJECT	"Reject cause" IE: "requested service option not subscribed".
7		SS		The UE shall not send a layer 3 message. This is checked during 5 s. Note: During this period, a new mobile originating CM connection should not be attempted, since then UE would send a new CM SERVICE REQUEST.
8		SS		SS releases the RRC connection.

Specific message contents

None.

9.5.4.5 Test requirement

The UE shall attempt MO CM connection (step 1).

At step 5 the UE shall send a CM SERVICE REQUEST.

After step 6 the UE shall not send a layer 3 message.

9.5.5 MM connection / establishment rejected cause 4

9.5.5.1 Definition

9.5.5.2 Conformance requirement

The CM SERVICE REQUEST message contains the:

- mobile identity according to clause 10.5.1.4;
- mobile station classmark 2;
- ciphering key sequence number; and
- CM service type identifying the requested type of transaction (e.g. mobile originating call establishment, emergency call establishment, short message service, supplementary service activation, location services)

...

If a CM SERVICE REJECT message is received by the mobile station, timer T3230 shall be stopped, the requesting CM sublayer entity informed. Then the mobile station shall proceed as follows:

...

- If cause value #4 is received, the mobile station aborts any MM connection, deletes any TMSI, LAI and ciphering key sequence number in the SIM, changes the update status to NOT UPDATED (and stores it in the SIM according to clause 4.1.2.2), and enters the MM sublayer state WAIT FOR NETWORK COMMAND. If subsequently the RR connection is released or aborted, this will force the mobile station to initiate a normal location updating). Whether the CM request shall be memorized during the location updating procedure, is a choice of implementation.

References

TS 24.008 clause 4.5.1.1.

9.5.5.3 Test purpose

To verify that the UE can correctly set up an MM connection in a Mobile Originating CM connection attempt and send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to TMSI.

To verify that the UE, when receiving a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR" shall wait for the network to release the RRC connection.

To verify that the UE shall then perform a normal location updating procedure.

9.5.5.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS responds with a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR". On receipt of this message, the UE shall delete any TMSI, LAI, cipher key and cipher key sequence number. The RRC CONNECTION is released. It is checked that the UE performs a normal location updating procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		A MO CM connection is attempted.
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI.
6	←		CM SERVICE REJECT	"Reject cause" = "IMSI unknown in VLR".
7		SS		SS releases the RRC connection.
8			Void	
9		SS		SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Registration".
10			Void	
11			Void	
12	→		LOCATION UPDATING REQUEST	"Ciphering key sequence number" = "No key is available". "Mobile identity" = IMSI. "Location area identification" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
13	←		AUTHENTICATION REQUEST	
14	→		AUTHENTICATION RESPONSE	
14a	←		SECURITY MODE COMMAND	
14b	→		SECURITY MODE COMPLETE	
15	←		LOCATION UPDATING ACCEPT	"Mobile identity" = new TMSI.
16	→		TMSI REALLOCATION COMPLETE	
17		SS		SS releases the RRC connection.
18			Void	

Specific message contents

None.

9.5.5.5 Test requirement

- 1) The UE shall attempt MO CM connection (at step 1) and at step 5 the UE shall send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to the TMSI.
- 2) At step 6 the SS should send a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR", and at step 9 the UE shall initiate RRC connection establishment with establishment cause set to "Registration".
- 3) At step 12 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

9.5.6 MM connection / expiry T3230

9.5.6.1 Definition

9.5.6.2 Conformance requirement

At T3230 expiry (i.e. no response is given but an RRC connection is available) the MM connection establishment shall be aborted.

References

TS 24.008 clauses 4.5.1.2 and 11.2.

9.5.6.3 Test purpose

To verify that at T3230 expiry, the UE aborts the MM-connection establishment.

9.5.6.4 Method of test

Initial conditions

- System Simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS waits for expiry of timer T3230. It is checked that the UE send a MM STATUS message and waits for the release of the RRC-connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	The SS waits for expiry of timer T3230.
6	SS			
7	←		CM SERVICE ACCEPT	"Reject cause" IE is "message type not compatible with protocol state". After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		MM STATUS	
9	←		RRC CONNECTION RELEASE	
10	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.6.5 Test requirement

The UE shall attempt MO CM connection (step 1).

At step 8 the UE shall send a MM STATUS message.

9.5.7 MM connection / abortion by the network

9.5.7.1 MM connection / abortion by the network / cause #6

9.5.7.1.1 Definition

9.5.7.1.2 Conformance requirement

At the receipt of the ABORT message the mobile station shall abort any MM connection establishment or call re-establishment procedure and release all MM connections (if any). If cause value #6 is received the mobile station shall delete any TMSI, LAI and ciphering key sequence number stored in the SIM, set the update status to ROAMING NOT ALLOWED (and store it in the SIM according to clause 4.1.2.2) and consider the SIM invalid until switch off or the SIM is removed. As a consequence the mobile station enters state MM IDLE, substate NO IMSI after the release of the RR connection.

The mobile station shall then wait for the network to release the RR connection - see clause 4.5.3.1.

Reference(s)

TS 24.008 clause 4.3.5.2.

9.5.7.1.3 Test purpose

To check that upon reception of an ABORT message with cause #6 during call establishment:

- the UE does not send any layer 3 message;
- after reception of an ABORT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN;
- the UE does not perform location updating, does not answer to paging with TMSI, rejects any request for mobile originating call except emergency call, does not perform IMSI detach;
- the UE accepts a request for emergency call.

9.5.7.1.4 Method of test

Initial Conditions

- System Simulator:
 - 2 cells, default parameters.
- User Equipment:
 - the UE has a valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT Statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test procedure

A mobile originating CM connection is attempted. Upon reception of the AUTHENTICATION RESPONSE message, the SS sends an ABORT message with cause #6. The SS waits for 5 s. The UE shall not send any layer 3 message. The SS releases the RRC connection.

The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if deactivated.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1	UE			A mobile originating CM connection is attempted.
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI
6	←		AUTHENTICATION REQUEST	
7	→		AUTHENTICATION RESPONSE	"reject cause" = #6. The SS waits for 5 s. The UE shall not send any layer 3 message during that time. SS releases the RRC connection.
8	←		ABORT	
9	SS			
10	UE			
11	SS			
12			Void	
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) If PS mode: a routing area updating procedure shall should be performed.
14	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 27). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
15	SS			The SS waits at least 7 minutes for a possible periodic updating.
16	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
17	←		PAGING TYPE 1	"UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
18	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is verified during 3 s.
19	UE			A MO CM connection is attempted.
20	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
21	UE			If the UE supports speech (see ICS), an emergency call is attempted.
22	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Emergency call".
23			Void	
24			Void	
25	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. CKSN = No key is available, Mobile identity = IMEI
26	←		CM SERVICE ACCEPT	
27	→		EMERGENCY SETUP	"Cause" = unassigned number. SS releases the RRC connection.
28	←		RELEASE COMPLETE	
29	SS			
30			Void	
31	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. A Detach Request will can be received in PS mode.

Step	Direction		Message	Comments
	UE	SS		
32	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
33	UE			Depending on what has been performed in step 31 the UE is brought back to operation. <u>The subsequent GMM attach shall be rejected if received in the PS mode.</u>
34	SS			SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to: "Registration".
35			Void	
36			Void	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
38	←		AUTHENTICATION REQUEST	"CKSN" = CKSN1.
39	→		AUTHENTICATION RESPONSE	
39a	SS			The SS starts integrity protection
40	←		LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
41	→		TMSI REALLOCATION COMPLETE	
42	SS			SS releases the RRC connection.
43			Void	
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.

9.5.7.1.5 Test requirement

- 1) At step 10 the UE shall not send any layer 3 message.
- 2)
 - 2.1 At step 14 the UE shall not initiate an RRC connection establishment (not perform normal location updating).
 - 2.2 At step 16 the UE shall not initiate an RRC connection establishment.(not perform periodic location updating).
 - 2.3 At step 18 the UE shall not initiate an RRC connection establishment (not respond to paging with TMSI).
 - 2.4 At step 20 the UE shall not initiate an RRC connection establishment (reject any request for Mobile Originating call establishment).
 - 2.5 At step 32 the UE shall not initiate an RRC connection establishment.(not perform IMSI detach).
- 3) At step 22 the UE shall initiate RRC connection establishment with the establishment cause set to "emergency call".
- 4) At step 37 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

9.5.7.2 MM connection / abortion by the network / cause not equal to #6

9.5.7.2.1 Definition

9.5.7.2.2 Conformance requirement

At the receipt of the ABORT message the mobile station shall abort any MM connection establishment or call re-establishment procedure and release all MM connections (if any). If cause value #6 is received the mobile station shall delete any TMSI, LAI and ciphering key sequence number stored in the USIM, set the update status to ROAMING NOT ALLOWED (and store it in the USIM according to TS 24.008 clause 4.1.2.2) and consider the USIM invalid until switch off or the USIM is removed. As a consequence the mobile station enters state MM IDLE, substate NO IMSI after the release of the RR connection.

The mobile station shall then wait for the network to release the RR connection - see TS 24.008 clause 4.5.3.1.

Reference(s)

TS 24.008 clause 4.3.5.

9.5.7.2.3 Test purpose

To check that when multiple MM connections are established, the UE releases all MM connections upon reception of an ABORT message, in the case when the two MM connections are established for a mobile terminating call and a non call related supplementary service operation.

To check that the TMSI is not deleted from UE after reception of ABORT message with cause other than #6.

9.5.7.2.4 Method of test

Initial Conditions

- System Simulator:
 - 1 cell, default parameters.
 - T3212 is set to 6 minutes.
- User Equipment:
 - the UE is in state U10 of a mobile terminating call.

Related ICS/IXIT Statement(s)

The UE supports a non call related supplementary service operation during an active call Yes/No.

Test procedure

A non call related supplementary service operation is attempted at the UE. Upon reception of the REGISTER message, the SS sends an ABORT message with cause # 17. The SS waits for 5 s. The UE shall not send any layer 3 message. The SS releases the RRC connection. The UE shall perform periodic location updating 6 minutes after the SS releases the RRC connection. TMSI shall be used as Mobile Identity in LOCATION UPDATING REQUEST message.

Expected Sequence

This procedure is performed if the UE supports non call related supplementary service operation.

Step	Direction		Message	Comments
	UE	SS		
1	UE			A non call related supplementary service operation is attempted at the UE. The SS verifies that the IE "CM service type" in the received CM SERVICE REQUEST is set to "Supplementary service activation". "reject cause" = #17. The SS waits for 5 seconds. The UE shall not send any layer 3 message during that time. The UE indicates the signalling connection release. The SS releases the RRC connection.
2			Void	
3			Void	
4			Void	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE ACCEPT	
7	→		REGISTER	
8	←		ABORT	
9		SS		
9a			Void	
10			Void	
11		SS		
12			Void	
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST is set to "Registration". This message shall be sent by the UE between 5 minutes 45s and 6 minutes 15s after step 11. "Location updating type" = periodic updating, "Mobile Identity" = TMSI "Mobile identity" = TMSI. The SS releases the RRC connection.
14	→		LOCATION UPDATING REQUEST	
15	←		LOCATION UPDATING ACCEPT	
16		SS		

Specific message contents

None.

9.5.7.2.5 Test requirement

After step 8 the UE shall release all MM connections.

After step 12 the UE shall perform periodic location updating with TMSI used as Mobile Identity.

9.5.8 MM connection / follow-on request pending

9.5.8.1 MM connection / follow-on request pending / test 1

9.5.8.1.1 Definition

9.5.8.1.2 Conformance requirement

The UE shall not attempt to establish a new MM connection after location updating on the same RRC connection if not allowed by the network.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.1.3 Test purpose

To check that when the network does not include the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has a CM application request pending does not attempt to establish a new MM connection on that RRC connection.

9.5.8.1.4 Method of test

Initial Conditions

- System Simulator:
 - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".
- User Equipment:
 - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

None.

Test procedure

The UE is activated and a CM connection is attempted during the location updating procedure. The SS does not include the follow on proceed information element in the LOCATION UPDATING ACCEPT message. The SS waits for at least 8 s. The UE shall not send any layer 3 message for 8 s.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach. Then the SS waits for 15 s. During this delay a CM connection is attempted.
6	←		LOCATION UPDATING ACCEPT	follow on proceed IE not included.
7		SS		The SS wait for at least 8 s.
8		UE		The UE shall not send any layer 3 message for 8 s after reception of the LOCATION UPDATING ACCEPT message.
9	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.1.5 Test requirement

After step 8 the UE shall not send any layer 3 messages.

9.5.8.2 MM connection / follow-on request pending / test 2

9.5.8.2.1 Definition

9.5.8.2.2 Conformance requirement

A UE supporting the follow-on request procedure and having a CM connection request pending shall correctly establish an MM connection following a location update when allowed by the network.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.2.3 Test purpose

To check that when the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that supports the follow on request procedure and that has a CM application request pending establishes successfully a new MM connection on that RRC connection.

9.5.8.2.4 Method of test

Initial Conditions

- System Simulator:
 - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".
- User Equipment:
 - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

UE supports the follow on request procedure Yes/No.

Test procedure

The UE is activated and a CM connection is attempted during the location updating procedure. The SS includes the follow on proceed information element in the LOCATION UPDATING ACCEPT message. The SS waits for at least 8 s.

If the UE supports the follow on request procedure:

- the UE shall send a CM SERVICE REQUEST. Upon reception of that message, the SS sends a CM SERVICE ACCEPT message. The UE shall send an initial CM message. Upon reception of that message, the SS releases the RRC connection.

If the UE does not support the follow on request procedure:

- the UE shall not send any layer 3 message for 8 s.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING ACCEPT	Location updating type = IMSI attach. Then the SS waits for 15 s. During this delay a CM connection is attempted. follow on proceed IE included.
				If the UE supports the follow on request procedure (see ICS) steps A7 to A9 are performed, otherwise steps B7 to B8 are performed.
A7	→		CM SERVICE REQUEST	
A8	←		CM SERVICE ACCEPT	
A9	→		An initial CM message	
B7		SS		The SS wait for at least 8 s. The UE shall not send any layer 3 message for 8 s after reception of the LOCATION UPDATING ACCEPT message.
B8		UE		
10	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
11	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.2.5 Test requirement

After step 6:

The UE shall send a CM SERVICE REQUEST if the UE supports the follow on request procedure.

The UE shall not send any layer 3 message if the UE does not support the follow on request procedure.

9.5.8.3 MM connection / follow-on request pending / test 3

9.5.8.3.1 Definition

9.5.8.3.2 Conformance requirement

- 1) The UE shall not set the follow on proceed IE in a LOCATION UPDATING REQUEST message if no MM connection request is pending.
- 2) When the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has no CM application request pending shall not attempt to establish a new MM connection on that RRC connection.
- 3) The UE shall correctly handle a CM connection established by the network on the RRC connection that was used for the location updating procedure.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.3.3 Test purpose

- 1) To check that a UE that has no CM application request pending sets the follow on proceed IE to No follow-on request pending in a LOCATION UPDATING REQUEST message.
- 2) To check that when the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has no CM application request pending does not attempt to establish a new MM connection on that RRC connection.
- 3) To check that the UE accepts establishment by the network of a new MM connection on the existing RRC connection.

9.5.8.3.4 Method of test

Initial Conditions

- System Simulator:
 - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".
- User Equipment:
 - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

Supported services on TCH.

Test procedure

The UE is activated. The UE performs location updating. The UE shall set the follow on proceed IE to No follow-on request pending in the LOCATION UPDATING REQUEST message. The SS includes the follow on proceed IE in the LOCATION UPDATING ACCEPT message. The SS waits for 5 s. The UE shall not send any layer 3 message for 5 s. The SS sends a SETUP message to the UE requesting a basic service supported by the UE. The UE shall send either a CALL CONFIRMED message if it supports a service on TCH or a RELEASE COMPLETE with cause #88.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		The UE is activated.
2		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
3		←	RRC CONNECTION SETUP	
4		→	RRC CONNECTION SETUP COMPLETE	
5		→	LOCATION UPDATING REQUEST	"Location updating type" = IMSI attach. The FOR bit is set to No follow-on request pending.
6		←	LOCATION UPDATING ACCEPT	follow on proceed IE is included.
7		SS		The SS wait for 5 s.
8		UE		The UE shall not send any layer 3 message for 5 s after reception of the LOCATION UPDATING ACCEPT message.
9		←	SETUP	
A10		→	CALL CONFIRMED	If the UE supports a basic service on TCH.
B10		→	RELEASE COMPLETE	If the UE does not support any basic service on TCH. cause #88.
11		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12		→	RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.3.5 Test requirement

At step 8 the UE shall not send any layer 3 message.

After step 9:

The UE shall send CALL CONFIRMED message if the UE supports a basic service on TCH.

The UE shall send RELEASE COMPLETE message if the UE does not support a basic service on TCH.

CHANGE REQUEST

⌘ **TS 34.123-1 CR 833** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 for GMM test cases (P4 and low priority test cases)		
Source:	⌘ SEMCJ, Sasken, Nokia.		
Work item code:	⌘ TEI	Date:	⌘ 10/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ There is no test step to verify the behaviour of the UE operation mode A in the following test cases. -12.9.3, 12.9.4, 12.9.5, 12.9.6, 12.9.7a, 12.9.8, 12.9.9, 12.9.10, 12.9.11 (Change from T1-040547) As per 24.008 section 4.7.13.4 "Service request procedure not accepted by the network": # 3 (Illegal MS); # 6 (Illegal ME); - A GPRS MS operating in MS operation mode A shall in addition set the update status to U3 ROAMING NOT ALLOWED, shall delete any TMSI, LAI and ciphering key sequence number. The SIM shall be considered as invalid also for non-GPRS services until switching off or the SIM is removed." Thus UE after receiving Service Reject with cause as "Illegal MS", when it is again powered on or the SIM is inserted, will perform CS registration. Further modifications to 12.9.8 to ensure that the test purpose is fulfilled. Test purpose is to test that the SERVICE REQUEST is barred, not that the ATTACH REQUEST is barred.
Summary of change:	⌘ Test steps for the behaviour of the UE operation mode A are newly added in the Expected sequence. (Change from T1-040547)

At Step 14a and 24 in subclause 12.9.3 added Registration on CS for UE operating in Mode A.

In 12.9.8 Initial conditions, Expected Sequence and Test requirements modified.

Consequences if not approved: ⌘ UE operation mode A cannot be tested.

(Change from T1-040547)

Test procedure is not consistent with the core specs.
A conformant UE will fail with this testcase.

Test case 12.9.8 would be testing ATTACH REQUEST barring.

Clauses affected: ⌘ 12.9.3, 12.9.4, 12.9.5, 12.9.6, 12.9.7a, 12.9.8, 12.9.9, 12.9.10, 12.9.11

Other specs affected:	⌘	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Other core specifications	⌘	
		<input type="checkbox"/> Y	<input checked="" type="checkbox"/> X			Test specifications
		<input type="checkbox"/> Y	<input checked="" type="checkbox"/> 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>

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 DEREGISTERED. 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		
1	UE			The following message are sent and shall be received on cell A. 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached'
6			Void	
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"
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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.

Step	Direction		Message	Comments
	UE	SS		
19	->		SERVICE REQUEST	Service type = "signalling" Reject cause = "Illegal MS" The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds) If possible (see ICS) USIM replacement is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed See TS 34.108 This is applicable only for UE in UE operation mode A. The UE initiates a PS attach, by MMI or by AT command. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = IMSI The SS starts ciphering and integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. Service type = "signalling" The SS releases RRC connection. The UE is switched off or power is removed (see ICS). Message not sent if power is removed. Detach type = 'power switched off, PS detach' 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 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.
20	<-		SERVICE REJECT	
21	UE			
22		SS		
23		UE		
24	UE		Registration on CS Void	
25		UE		
25a		SS		
26	->		ATTACH REQUEST	
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c		SS		
27	<-		ATTACH ACCEPT	
28	->		ATTACH COMPLETE	
29	UE			
30	->		SERVICE REQUEST	
31	<-		SERVICE REJECT	
32			VOID	
33		SS	VOID	
34		SS		
35		UE		
36	->		DETACH REQUEST	
37		SS		
38		UE		

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

12.9.4.1 Definition

12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PS 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 "PS service not allowed".

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(PS services not allowed).
- c) After the UE receives the SERVICE REJECT message with the cause value #7(PS 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		
1	UE			The following message are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 38.
3	UE			The SS is set in network operation mode II and activates cell A.
3a	SS			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". Attach type = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached'
6			Void	
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 = "PS services not allowed"
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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
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 = "PS services not allowed"

Step	Direction		Message	Comments
	UE	SS		
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds) The UE gets the USIM replaced, is powered up or switched on.
22		SS		
23	UE			
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". Attach type = 'PS attach' Mobile identity = IMSI The SS starts ciphering and integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
26	->		ATTACH REQUEST	
26a	<-		AUTHENTICATION AND CIPHERING REQUEST	
26b	->		AUTHENTICATION AND CIPHERING RESPONSE	
26c	SS			
27	<-		ATTACH ACCEPT	
28	->		ATTACH COMPLETE	
29	UE			
30	->		SERVICE REQUEST	The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command. Service type = "signalling"
31	<-		SERVICE REJECT	The SS releases RRC connection.
32			VOID	
33	SS		VOID	
34	SS		VOID	
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, PS 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.
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 "PS 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 "PS 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		
1	UE			The following message are sent and shall be received on cell A. 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached'
6			Void	
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"
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 = 'PS 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 = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature
13	->		ATTACH COMPLETE	
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	
17			VOID	
18	SS		VOID	
19	SS			The SS releases RRC connection.
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, PS detach'

22	SS	<p>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.</p> <p>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.</p>
23	UE	

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/MNC1/LAC1/RAC1 (Not HPLMN) cell B in MCC2/MNC1/LAC1/RAC1.

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		
1	UE			The following message are sent and shall be received on cell A. 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached'
6			Void	
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"
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.
15	SS			The following messages shall be 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)
16	UE		Registration on CS	Cell B is preferred by the UE.
16a	UE			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 = 'PS attach' Mobile identity = IMSI
18a	<-		AUTHENTICATION AND CIPHERING REQUEST	

18b	->	AUTHENTICATION CIPHERING RESPONSE	AND	
18c	SS			The SS starts ciphering and integrity protection. Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'PS only attached'
19	<-	ATTACH ACCEPT		
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, PS 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.
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 all active PDP contexts.

After the UE deactivates all active PDP contexts, UE shall:

- perform PDP context(s) activation.

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

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 send the ACTIVATE PDP CONTEXT REQUEST message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				The following message are sent and shall be received on cell A.
2				The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 26.
3				The SS is set in network operation mode II and activates cell A.
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	
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.
18		UE		The UE initiates a PS call, 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, PS 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.
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, UE shall:

- initiate the PS attach procedure.

When the UE receives a SERVICE REJECT message with the cause "No PDP context activated", UE shall:

- deactivate all active PDP context.

At step15, UE shall:

- initiates a Service request procedure by sending a SERVICE REJECT message with Service type = "data".

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.

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 = "PS 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile 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' 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	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3 Update result = 'RA updated'
12	->		ROUTING AREA UPDATE COMPLETE	

13	UE		The UE is switched off or power is removed (see ICS).
13a		IMSI DETACH INDICATION	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, PS detach'
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 area 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS 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)
13a		SS		The following messages are sent and shall be received on cell C. 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 update' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile 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, combined PS / IMSI 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 shall:

- 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.

Initially, an access class X is barred.

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".

Access class x barred.

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 USIM is set up Access class x. The access class x is barred in cell A. 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. The UE is powered up or switched on and attempt to initiate an ATTACH. (see ICS)
2	UE		Void	No SERVICE REQUEST sent to SS, as access class X is barred. (SS waits 30 seconds)
3		SS	Void	The access class x is not barred anymore.
4	UE			The UE automatically initiates an attach.
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 = 'PS attach' Mobile identity = P-TMSI-2 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 = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
7	->	ATTACH COMPLETE	
7a	SS		<u>The access class x is barred in cell A</u>
8	UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8a	UE		<u>No SERVICE REQUEST sent to SS, as access class x is barred.</u> <u>SS waits 30 seconds</u> <u>The access class x is not barred any more</u>
8b	SS		
9	->	SERVICE REQUEST	Service Type = "signalling".
10	<-	SERVICE REJECT VOID	
11			
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, PS 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.
15	UE		<u>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.</u>

Specific message contents

None.

12.9.8.5 Test requirements

At ~~step2~~step 8a, when the UE access class x is barred, UE shall:

- not perform Service Request procedure.

~~At step5, when the UE access class x is barred, UE shall:~~

~~initiate the PS attach 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:

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 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 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 changes the conditions of cell A so that it is no longer a suitable "Serving cell".
- c) The UE aborts Service request procedure and performs Routing area updating procedure.
- d) The UE re-sends the SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling, this time in cell B

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A.
2	SS			The UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, go to step 22.
3	UE			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)
4	->		ATTACH REQUEST	The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4a	<-		AUTHENTICATION AND CIPHERING REQUEST	Attach type = 'PS attach'
4b	->		AUTHENTICATION AND CIPHERING RESPONSE	Mobile identity = P-TMSI-1
4c	SS			Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	The SS starts ciphering and integrity protection. No new mobile identity assigned.
6			Void	P-TMSI and P-TMSI signature not included.
6a	UE			Routing area identity = RAI-1
7	->		SERVICE REQUEST	Attach result = 'PS only attached'
8	SS			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, by MMI or by AT command.
9	UE			Service type = "signalling"
10	->		ROUTING AREA UPDATE REQUEST	The RF level of cell A is lowered until the level corresponds to that of a "Non-suitable cell".
11	<-		ROUTING AREA UPDATE ACCEPT	Note: the SS does not initiate the security mode control procedure.
12	->		ROUTING AREA UPDATE COMPLETE	The UE aborts Service request procedure.
13	UE			The following message are sent and shall be received on cell B.
14	->		SERVICE REQUEST	Update type = 'RA updating'
15	<-		AUTHENTICATION AND CIPHERING REQUEST	Update result = 'RA updated'
16	->		AUTHENTICATION AND CIPHERING RESPONSE	Mobile identity = P-TMSI-1
17	SS			P-TMSI-1 signature
18	SS			Routing area identity = RAI-4
19	UE			The UE initiates upper-layer signalling, e.g., Activate PDP Context request, either automatically or by MMI or by AT command.
20	->		DETACH REQUEST	Service type = "signalling"
				The SS initiates a security mode control procedure.
				After the security mode control procedure is completed, the SS releases RRC connection.
				The UE is switched off or power is removed (see ICS).
				Message not sent if power is removed.
				Detach type = 'power switched off, PS detach'

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

None.

12.9.9.5 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 step7, UE shall:

- perform the service request procedure.

At steps 9 and 10, after the SS sets the cell type of cell A to "Non-suitable cell" before the security mode control procedure is completed, UE shall;

- abort the Service request procedure
- perform the routing area updating procedure.

At step14, after the UE completes the routing area updating procedure, UE shall;

- restart the Service Request procedure.

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		
1	UE			The following message are sent and shall be received on cell A. 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS 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, PS 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.
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		
1	UE			The following message are sent and shall be received on cell A. 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 = 'PS attach' Mobile identity = P-TMSI-1 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 = 'PS only attached'
6			Void	
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 = 'PS attach' Mobile identity = P-TMSI-1 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	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Attach result = 'PS 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, PS 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.

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.

<End of Modification>

CHANGE REQUEST

⌘ **34.123-1 CR 834** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 34.123-1 Rel-5: Correction to package 2 MM test case 9.4.8		
Source:	⌘ Rohde & Schwarz, MCC 160		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Setting the initial condition of the UE in order to avoid ambiguities in the UE behaviour due to previous activities. Depending upon which test case has been run before the UE may have different information available (such as CKSN and TMSI) which influence its behaviour.
Summary of change:	⌘ The test case does not require to initialize the UE in such a way that the UE activities are unambiguous. It is therefore proposed to bring the UE to the Idle Updated state at the start of the test case rather than having to account for the possible behaviours in the test case (location updating type, mobile identity). Changes to T1-040948 - Clarified test procedure in section 9.4.8.4
Consequences if not approved:	⌘ Conformant UE may fail the test case.

Clauses affected:	⌘ 9.4.8								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X	X	X	X	Other core specifications Test specifications O&M Specifications	⌘ 34.123-3
Y	N								
X	X								
X	X								
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>

9.4.8 Location Updating after UE power off

9.4.8.1 Definition

Test to verify that the UE stores the equivalent PLMN list at UE power off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.2 Conformance requirement

The equivalent PLMN list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.

References

TS 24.008 4.4.4.6

9.4.8.3 Test purpose

To verify that the UE stores the equivalent PLMN list at UE switch off and uses the stored equivalent PLMN list after UE switch on.

9.4.8.4 Method of test

Initial conditions

- System Simulator:
 - three cells: A, B and C. Cell A belongs to PLMN1 which is HPLMN. Cell B belongs to PLMN2. Cell C belongs to PLMN3.

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 is switched off;~~

~~the UE is in automatic mode for PLMN selection;~~

the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell B.

- 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}	1 st	PLMN 1
EF _{PLMNwAcT}	Empty	
EF _{OPLMNwAcT}	1 st	PLMN 3
	2 nd	PLMN 2

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

The UE is switched on and is in idle-updated state on Cell B. Cell A and C are not available. Cell type of Cell A is then changed to make it available, cell types of Cell B and C are changed to make them unavailable. ~~When the UE is initially switched on it~~ will perform a normal location updating in Cell A, which is the only suitable cell available and belongs to the HPLMN. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN2 in the equivalent PLMN list. The UE shall be switched-off. Cell A shall be made unavailable and Cells B and C shall be made available. When the UE is switched-on again, the UE shall perform a normal location updating in Cell B and not in Cell C because PLMN2 is stored in the UE equivalent PLMN list.

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Serving cell". Set the cell type of Cell B and Cell C to the "non-suitable cell". (see note)
2		UE		The UE is switched on by either using the Power Switch or by applying power-void
3		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
4			Void	
5			Void	
6		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
6a		SS		The SS starts integrity protection.
7		←	LOCATION UPDATING ACCEPT	Equivalent PLMN List: PLMN 2
8		SS		The SS releases the RRC connection.
9		UE		If possible (see ICS) switch off is performed. Otherwise the power is removed. Steps 9a to 9c may be performed or not depending on the action made in step 9.
9a		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
9b		→	IMSI DETACH INDICATION	
9c		SS		The SS releases the RRC connection.
10			Void	The following messages shall be sent and 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 "suitable neighbour cell". Set the cell type of Cell C to the "suitable neighbour cell". (see note)
12		UE		Depending on what has been performed in step 9 the UE is brought back to operation.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
16a		SS		The SS starts integrity protection.
17		←	LOCATION UPDATING ACCEPT	
18		SS		The SS releases the RRC connection.
19			Void	
NOTE: The definitions for "Serving cell", "Suitable neighbour 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.

9.4.8.5 Test requirements

At step 16 the UE shall perform a normal location updating in Cell B.

<END OF MODIFIED SECTION>

CHANGE REQUEST

34.123-1 CR 836 # rev - # Current version: 5.7.1

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 MM testcase 9.1 to align with TTCN implementation.(Revision of T1-040551)		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 19/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# As the prose does not mention anything about Attach/Detach flag and if it is set to '01' as per the default message contents of SIB-1 which indicates that IMSI Attach/Detach is allowed. If the IMSI Attach/Detach is allowed, then IMSI DETACH INDICATION and IMSI ATTACH messages needs to be handled in the Test Sequence at step 9 and step 10 respectively. But this is not necessary to fulfill the test purpose and test requirement. Also it is not implemented in the approved TTCN.
Summary of change:	# In the initial Conditions mention "IMSI Attach/Detach is not allowed in both the cells"
Consequences if not approved:	# The prose specification and the approved TTCN implementation will not be in alignment with each other.

Clauses affected:	# 9.1.4								
Other specs affected:	<table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">X</td> <td style="border: 1px solid black; padding: 2px;">#</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	#	X	X	#	#	X
Y	N								
#	X								
X	#								
#	X								
Other comments:	# 34.123-1								

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.

9.1 TMSI reallocation

The intention of the TMSI Reallocation procedure is to assign a new temporary identity for the UE. If the message is not understood by the UE, the network could not establish a link to the UE. As this is a common MM procedure, it can be initiated at any time.

9.1.1 Definition

9.1.2 Conformance requirement

- 1) A UE shall acknowledge a new TMSI when explicitly allocated during a location updating procedure or an incoming call.
- 2) The TMSI shall be updated on the USIM when the UE is correctly deactivated in accordance with the manufacturer's instructions.
- 3) A UE shall answer paging with this TMSI and includes it in the PAGING RESPONSE message.

Reference(s)

TS 24.008 clause 4.3.1.

9.1.3 Test purpose

To verify that the UE is able to receive and acknowledge a new TMSI by means of an explicit TMSI reallocation procedure.

To verify that the UE has stored the TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in clause 9.4.1.

9.1.4 Method of test

Initial conditions

- System Simulator:
 - two cells A and B, belonging to different location areas a and b, default parameters;
 - [The SIB1 IE "CN domain specific NAS system information", for the CS Domain, is set to not allowing IMSI Attach/Detach in both the cells.](#)
- User Equipment:
 - the UE has valid TMSI (= TMSI1), CKSN, CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

Switch off button Yes/No.

Way to bring the UE into service.

Test Procedure

The UE is paged in cell B and the security mode is established. An explicit TMSI reallocation procedure is performed. The RRC CONNECTION is released. The UE is switched off and then its power supply is interrupted for 10 s. The power supply is resumed and then the UE is switched on and allowed sufficient time to guarantee that the UE is in service (listening to its paging subchannel). The system simulator then checks, by paging, whether the UE has stored the received TMSI.

The UE is made to select cell A. A normal location updating procedure is performed in cell A. An explicit TMSI reallocation procedure is performed and then the location updating procedure is accepted by the SS. The system simulator checks, by paging, whether the UE has stored the allocated TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
1	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI1. Establishment Cause: Terminating Conversation Call.
2	→		PAGING RESPONSE	"Mobile identity" =TMSI1
2a	←		AUTHENTICATION REQUEST	
2b	→		AUTHENTICATION RESPONSE	
3	SS			The SS starts integrity protection.
4			Void	
5	←		TMSI REALLOCATION COMMAND	"Mobile identity" = new TMSI (TMSI2) different from TMSI 1.
6	→		TMSI REALLOCATION COMPLETE	
7	SS			The SS releases the RRC connection.
8			Void	
9	UE			If possible (see ICS), the UE is switched off.
9a	UE			The power supply is interrupted for 10 s.
10	UE			The UE is switched on.
11	SS			The SS waits for 5 seconds to guarantee that the UE is in service (listening to its paging subchannel).
12	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI2. Establishment Cause: Terminating Conversation Call.
13	→		PAGING RESPONSE	"Mobile identity" =TMSI2.
14	SS			The SS releases the RRC connection. The following messages are sent and shall be received on cell A
15			Void	
16	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)
17	SS		RRC CONNECTION REQUEST	The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
18			Void	
19			Void	
20	→		LOCATION UPDATING REQUEST	location updating type = normal, "ciphering key sequence number" = CKSN, LAI = b, "mobile identity" = TMSI2.
20a	←		AUTHENTICATION REQUEST	
20b	→		AUTHENTICATION RESPONSE	
20c	SS			The SS starts integrity protection.
20d			Void	
21	←		TMSI REALLOCATION COMMAND	TMSI = TMSI1.
22	→		TMSI REALLOCATION COMPLETE	
23	←		LOCATION UPDATING ACCEPT	This message does not contain the optional Mobile Identity field.
24	SS			The SS releases the RRC connection.
25			Void	
25a				The SS waits for 5 seconds to allow the UE to become "idle updated" on cell A.
26	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI1). "Establishment cause": Terminating Conversational Call.
27	→		PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI1).
28	SS			The SS releases the RRC connection.
29			Void	
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.

9.1.5 Test requirement

At step 5 the UE shall receive and acknowledge a new TMSI (TMSI2) and has stored that in the USIM, and the UE is switched off and on after step 9 and 10.

At step 13 the UE shall transmit a new TMSI2 and includes it in the PAGING RESPONSE message.

At step 27 the UE shall answer paging with this TMSI1 and includes it in the PAGING RESPONSE message.

CR-Form-v7	
CHANGE REQUEST	
# 34.123-1 CR 837 # rev - #	Current version: 5.7.1 #

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 34.123-1 Rel-5: Correction to package 2 MAC test case 7.1.3.1		
Source:	# Rohde & Schwarz		
Work item code:	# TEI	Date:	# 13/05/2004
Category:	# F	Release:	# Rel-5
	<i>Use one of the following categories:</i> 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 .		<i>Use one of the following releases:</i> 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 this test case a RAB of 34.108 6.11.1, 7 bit LI UM RLC is used. However this UM RAB has a TTI of 40 ms, therefore we now need only 25 PDU's for 1 second of continuous data transmission instead of 50 PDU's
Summary of change:	# 1. Changed number of PDU's expected from '50' to '25'
Consequences if not approved:	# Test as specified may incorrectly fail a conformant mobile

Clauses affected:	# 7.1.3.1.4										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications # 34.123-3 <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N										
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X	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	# Affects R99, REL-4, 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.
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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.

7.1.3 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.

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 $(UM_7_PayloadSize * 5025) - 1$ 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 ~~50~~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 ~~50~~25 PDUs corresponds to ~~50~~25*TTI (~~20~~40ms) = 1 second of continuous data transmission. As the periodic measurement interval is 250ms this will guarantee that data transmission will be interrupted 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 50 <u>25</u> 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.

CHANGE REQUEST

⌘ **34.123-1 CR 854** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 package 2 RRC test case 8.4.1.2		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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 chap. 8.4.1.2.4, specific message content, one of the exceptions in RRC Connection Setup is to set the value for TFCl existence to FALSE and to set 'Fixed or flexible position' to FLEXIBLE. According to 25.212, chap 4.3.1: if 'TFCl existence' is FALSE BTFD should be used and 'Fixed or flexible position' should be FIXED.
Summary of change:	⌘ In RRC Connection Setup (step 2) the value 'Fixed or flexible position' should be set to FIXED. The corresponding change was made in TTCN already (T1s040252).
Consequences if not approved:	⌘ Inconsistencies between prose and TTCN implementation.

Clauses affected:	⌘ 8.4.1.2.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	34.123-3
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘										

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8.4.1.2 Measurement Control and Report: Inter-frequency measurement for transition from idle mode to CELL_DCH state (FDD)

8.4.1.2.1 Definition

8.4.1.2.2 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-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 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 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.

Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.4.1.8.2, 8.6.6.15 and 8.6.7.9

8.4.1.2.3 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, which requires compressed mode, starts to perform inter-frequency measurement and related reporting activities, when it receives a MEASUREMENT CONTROL message with the "DPCH compressed mode status info" IE indicating that a stored compressed mode pattern sequence be simultaneously activated.
3. To confirm that the UE, which does not require compressed mode, starts to perform inter-frequency measurement and related reporting activities when it receives a MEASUREMENT CONTROL message without IE "DPCH compressed mode status info".
4. To confirm that the UE excludes the IE "Measured Results" for any cells in the MEASUREMENT REPORT messages, after it receives a MEASUREMENT CONTROL message with "Reporting cell status" IE omitted.

8.4.1.2.4 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).

Related ICS/IXIT statements

- Compressed mode required yes/no

Test Procedure

Table 8.4.1.2-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.4.1.2-1

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec	dBm/ 3.84 MHz	-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). The RRC CONNECTION SETUP message used in procedure P3 or P5 should contain IE "DPCH compressed mode info", setting the "TGPS status flag" to "Deactivate" and configuring transmission pattern gap sequence with TGPSI=1 only if UE requires compressed mode. 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). An optional PHYSICAL CHANNEL RECONFIGURATION message is transmitted by SS to activate the transmission pattern gap sequence with TGPSI=1, if the UE requires compressed mode to perform inter-frequency measurement. Correspondingly, the UE shall start the compressed mode operations at designated time and respond with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH. 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.

If UE requires compressed mode, SS sends PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH, specifying that compressed mode sequence pattern with TGPSI=1 be deactivated. The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH if UE configures according to the PHYSICAL CHANNEL RECONFIGURATION message.

SS sends MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS requests UE to perform inter-frequency measurement with periodic reporting of CPICH RSCP values for cell 4. If UE requires compressed mode, IE "DPCH compressed status info" IE to activate the transmission gap pattern sequence with TGPSI = 1 is included in this message.

The UE shall start inter-frequency measurement and reporting for cell 4's CPICH 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 (if compressed mode is not required by the UE), or PHYSICAL CHANNEL RECONFIGURATION (if compressed mode is required by the UE)	If compressed mode is not required (refer ICS/IXIT), then goto step 6. Else, activate the compressed mode operation.
5a		→	Void (if compressed mode is not required by the UE), or PHYSICAL CHANNEL RECONFIGURATION COMPLETE (if compressed mode is required by the UE)	UE shall remain in CELL_DCH state.
6				SS checks to see that no MEASUREMENT REPORT messages are received for 10 s. If compressed mode is not required (refer ICS/IXIT), then goto step 9.
7		←	Void (if compressed mode is not required by the UE), or PHYSICAL CHANNEL RECONFIGURATION (if compressed mode is required by the UE)	Existing compressed mode sequence pattern is deactivated in this message.
8		→	Void (if compressed mode is not required by the UE), or PHYSICAL CHANNEL RECONFIGURATION COMPLETE (if compressed mode is required by the UE)	UE shall remain in CELL_DCH state.
9		←	MEASUREMENT CONTROL	SS requests UE to start inter-frequency measurement for cell 4, and performing periodic reporting for cell 4's CPICH RSCP. See specific message content below.
10		→	MEASUREMENT REPORT	UE shall report cell 4's CPICH RSCP reading periodically.
11		←	MEASUREMENT CONTROL	SS changes the reporting criteria of cell 4 to 'event 2c'. "Reporting cell status" IE in this message is omitted.
12		→	MEASUREMENT REPORT	SS monitors the uplink DCCH to make sure that only 1 such message is received almost immediately after step 11. This message shall not contain IE "Inter-frequency cell measured results"

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

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
-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	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 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	FDD
- UARFCN uplink (Nu)	Not present
- UARFCN downlink (Nd)	Reference to table 6.1.2 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	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.4 (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 neighbouring 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)

If UE do not require compressed mode, use the message found in TS 34.108 clause 9.

If UE requires compressed mode, use the message found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	Initialise
- Timing Indication	Not Present
- CFN-targetSFN frame offset	
- Downlink DPCH power control information	Single TPC
- DPC mode	FDD
- CHOICE Mode	0
- Power offset $P_{\text{Pilot-DPCH}}$	Not Present
- DL rate matching restriction information	Refer to the parameter set in TS 34.108
- Spreading factor	Flexible Fixed
- Fixed or flexible position	FALSE
- TFCI existence	Refer to the parameter set in TS 34.108
- Number of bits for Pilot bits (SF=128, 256)	This IE is present only if the ICS/IXIT statement indicates that compressed mode is required.
- DPCH compressed mode info	1
- TGPSI	Deactivate
- TGPS Status Flag	Not Present
- TGCFN	
- 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 the on UE capability
- Downlink compressed mode method	SF/2 (or Not present depending on the UE capability)
- Uplink compressed mode method	SF/2 or Not present depending on the UE capability
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	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
Downlink information for each radio link list	
- Downlink information for each radio link	FDD
- CHOICE mode	
- Primary CPICH info	
- Primary scrambling code	Reference to 34.108
- 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 can be used
- DPCH frame offset	Set to value: Default DPCH Offset value mod 38400
- Secondary CPICH info	Not Present
- DL Channelisation code	
- Secondary scrambling code	1
- Spreading factor	Reference to 34.108
- Code number	0
- Scrambling code change	No code change
- TPC combination index	0

- SSdT Cell identity	Not present
- Closed loop timing adjustment mode	Not present
SCCPCH information for FACH	Not present

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 838** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 SM TC 11.3.1 RAB release location		
Source:	⌘ Nokia		
Work item code:	⌘ TEI	Date:	⌘ 22/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ . Package 1 test case 11.3.1 is modified so that TTCN can handle simultaneous RAB releasing and Detach Request received from UE. . If the UE has send a detach request it has an ongoing GMM procedure and thus SM procedures should be suspended and the UE should not send any SM STATUS message in A-branch of the test case (24.008 V3.18.0 clauses 4.7.1 and 6.1.1).
Summary of change:	⌘ 1. RAB release is handled after detach request is received from UE in manual attach case. 2. Clarification to Test procedure. 3. Originating Streaming Call added as one possible traffic class in context activation. This is already implemented in TTCN.
Consequences if not approved:	⌘ Test case will fail with conformant UE.

Clauses affected:	⌘ 11.3.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	X	X	⌘	34.123-3
Y	N										
X	X										
X	X										
X	X										
Other comments:	⌘ Affects R99, Rel-4 and Rel-5										

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<START OF MODIFIED SECTION>

11.3 PDP context deactivation procedures

11.3.1 PDP context deactivation initiated by the UE

11.3.1.1 Definition

11.3.1.2 Conformance requirement

In order to deactivate a PDP context, the UE sends a DEACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP-INACTIVE-PENDING and starts timer T3390. The message contains the transaction identifier (TI) in use for the PDP context to be deactivated and a cause code that typically indicates one of the following causes:

- #26: insufficient resources;
- #36: regular PDP context deactivation; or
- #37: QoS not accepted.

The network shall reply with the DEACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the DEACTIVATE PDP CONTEXT ACCEPT message, the UE shall stop timer T3390. In UMTS, the network shall initiate the release of Radio Access Bearer associated with this PDP context.

Whenever any session management message except REQUEST PDP CONTEXT ACTIVATION or SM-STATUS is received by the UE specifying a transaction identifier which is not recognised as relating to an active context or to a context that is in the process of activation or deactivation, the UE shall send a SM-STATUS message with cause #81 "invalid transaction identifier value" using the received transaction identifier value including the extension octet and remain in the PDP-INACTIVE state.

Reference

3GPP TS 24.008 clauses 6.1.3.4.1 and 8.3.2 (b).

11.3.1.3 Test purpose

To test the behaviour of the UE upon receipt of a DEACTIVATE PDP CONTEXT ACCEPT message from the SS in PDP context deactivation procedure initiated by the UE.

To test the behaviour of the UE upon receipt of a session management message (except REQUEST PDP CONTEXT ACTIVATION or SM-STATUS) specifying a transaction identifier which is not recognised as relating to an active context or to a context that is in the process of activation or deactivation.

11.3.1.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Related ICS/IXIT statements

- PS Supported yes/no
- Method of activating a PDP context

- Method of deactivating the PDP context
- Support of automatic PS attach procedure at switch on yes/no

Test procedure

A PDP context is activated by the user and accepted by the SS. PDP context deactivation is then requested by the user. The UE shall send a DEACTIVATE PDP CONTEXT REQUEST message to the SS. The SS shall then reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then wait for T3390 seconds to ensure T3390 has been stopped and that no further messages are sent from the UE. The UE in manual mode may perform a detach procedure. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and if the UE has not ~~performed~~ started a detach procedure -it shall reply with an SM STATUS message with cause #81 'transaction identifier not known'.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation with traffic class " "originatingStreamingCall" ", " "originatingInteractiveCall" " or " "originatingBackgroundCall" ". SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either Originating Streaming Call, Originating Interactive Call or Originating Background Call The SS starts ciphering and integrity protection. Activate a PDP context The SS establishes the RAB. Accept the PDP context Initiate a context deactivation Request a deactivation of a PDP context and starts waiting for 'T3390'. SM cause set to #36. SS accepts the PDP context deactivation and timer 'T3390' is canceled. The SS releases the RAB associated with this PDP Context. The UE may (optionally) send a Detach Request (only Note 1). The SS shall wait up to 'T3390' seconds for the Detach Request. While waiting the SS releases the RAB associated with this PDP Context. If the SS receives a Detach Request the test execution continues from step A8, otherwise from step B8. SS shall check that no further deactivate request messages are sent during this time.
1a	SS			
1b	→		SERVICE REQUEST	
1c	SS			
2	→		ACTIVATE PDP CONTEXT REQUEST	
2a	SS			
3	←		ACTIVATE PDP CONTEXT ACCEPT	
4	UE			
5	→		DEACTIVATE PDP CONTEXT REQUEST	
6	←		DEACTIVATE PDP CONTEXT ACCEPT	
6a	SS		Void	
7	→		DETACH REQUEST	
A8	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context. Start timer 'T3386' and wait until it expires to ensure that UE does not respond to Modify PDP Context Request(Net) after Detach Request has been sent from UE. SS responds with DETACH ACCEPT message as a Detach Request was transmitted by the UE
A9	SS			
A10	←		DETACH ACCEPT	
B8	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context. (Allowed for Note 1 and Note 2). Cause set to #81
B9	→		SM STATUS	
Note 1: Support of automatic PS attach procedure at switch on – no				
Note 2: Support of automatic PS attach procedure at switch on – yes				

Specific message contents

Steps 2 and 5: TI flag (bit 8) in TI IE is set to 0 (transaction initiated by the UE).

Steps 3, 6, A8 and B8: TI flag in TI IE is set to 1.

Steps 2, 3, 5, 6, A8 and B8: The value of TIO IE (bits 5-7) of the transaction identifier (TI) is the same in these test steps.

11.3.1.5 Test requirements

At step 1a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to one of the following causes:

- Originating Streaming Call;
- Originating Interactive Call or
- Originating Background Call

In PDP context deactivation procedure initiated by the UE, upon receipt of a DEACTIVATE PDP CONTEXT ACCEPT message from the SS, the UE shall deactivate PDP context associated with given PDP address and TI.

If the UE has not performed a detach procedure then, upon modification procedure initiated by the network, for deactivated PDP context, the UE shall reply with SM STATUS message with cause #81.

<END OF MODIFIED SECTION>

CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.123-1 CR 839** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 SM TC 11.3.2 RAB release location		
Source:	⌘ Nokia		
Work item code:	⌘ TEI	Date:	⌘ 22/04/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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:	⌘ . Package 1 test case 11.3.2 is modified so that TTCN can handle simultaneous RAB releasing and Detach Request received from UE. . If the UE has send a detach request it has an ongoing GMM procedure and thus SM procedures should be suspended and the UE should not send any SM STATUS message in A-branch of the test case (24.008 V3.18.0 clauses 4.7.1 and 6.1.1).
Summary of change:	⌘ 1. RAB release is handled after detach request is received from UE in manual attach case. 2. Clarification to Test procedure. 3. Originating Streaming Call added as one possible traffic class in context activation. This is already implemented in TTCN.
Consequences if not approved:	⌘ Test case will fail with conformant UE.

Clauses affected:	⌘ 11.3.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	X	X	⌘	34.123-3
Y	N										
X	X										
X	X										
X	X										
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>

11.3.2 PDP context deactivation initiated by the network

11.3.2.1 Definition

11.3.2.2 Conformance requirement

In order to deactivate a PDP context, the network sends a DEACTIVATE PDP CONTEXT REQUEST message to the UE and starts timer T3395. The message contains the transaction identifier in use for the PDP context to be deactivated and a cause code that typically indicates one of the following causes:

36: regular PDP context deactivation;

38: network failure; or

39: reactivation requested.

The UE shall, upon receipt of this message, reply with a DEACTIVATE PDP CONTEXT ACCEPT message. Upon receipt of the DEACTIVATE PDP CONTEXT ACCEPT message, the network shall stop the timer T3395. In UMTS, the network shall initiate the release of Radio Access Bearer associated with this PDP context.

Reference

3GPP TS 24.008 clause 6.1.3.4.2.

11.3.2.3 Test purpose

To test the behaviour of the UE upon receipt of a DEACTIVATE PDP CONTEXT REQUEST message from the SS.

11.3.2.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Related ICS/IXIT statements

- PS Supported yes/no
- Method of activating a PDP context
- Support of automatic PS attach procedure at switch on yes/no

Test procedure

A PDP context is activated by the user and accepted by the SS. A DEACTIVATE PDP CONTEXT REQUEST message is then sent by the SS. The UE shall reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then wait for T3395 seconds to ensure that no further messages are sent from the UE. The UE in manual mode may perform a detach procedure. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and if the UE has not ~~performed~~ started a detach procedure -it shall reply with an SM STATUS message with cause #81 'invalid transaction identifier value'.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation with traffic class " "originatingStreamingCall" ", " "originatingInteractiveCall" " or " "originatingBackgroundCall" ". SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either Originating Streaming Call, Originating Interactive Call or Originating Background Call The SS starts ciphering and integrity protection. Activate a PDP context The SS establishes the RAB. Accept the PDP context Request a deactivation of a PDP context and starts waiting for 'T3395'. SM cause set to #36. Accept the PDP context deactivation and timer 'T3395' is canceled. The SS releases the RAB associated with this PDP Context. The UE may (optionally) send a Detach Request (only Note 1). The SS shall wait up to 'T3395' seconds for the Detach Request. While waiting the SS releases the RAB associated with this PDP Context. If the SS receives a Detach Request the test execution continues from step A6, otherwise from step B6. SS shall check that no further deactivate request messages are sent during this time.
1a	SS			
1b	→		SERVICE REQUEST	
1c	SS			
2	→		ACTIVATE PDP CONTEXT REQUEST	
2a	SS			
3	←		ACTIVATE PDP CONTEXT ACCEPT	
4	←		DEACTIVATE PDP CONTEXT REQUEST	
5	→		DEACTIVATE PDP CONTEXT ACCEPT	
5a	SS		Void	
5b	→		DETACH REQUEST	
A6	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
A7	SS			Start timer 'T3386' and wait until it expires to ensure that UE does not respond to Modify PDP Context Request(Net) after Detach Request has been sent from UE.
A8	←		DETACH ACCEPT	SS responds with DETACH ACCEPT message as a Detach Request was transmitted by the UE
B6	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context. (Allowed for Note 1 and Note 2).
B7	→		SM STATUS	Cause set to #81
Note 1: Support of automatic PS attach procedure at switch on – no				
Note 2: Support of automatic PS attach procedure at switch on – yes				

Specific message contents

Steps 2 and 5: TI flag (bit 8) in TI IE is set to 0 (transaction initiated by the UE).

Steps 3, 4, A6 and B6: TI flag in TI IE is set to 1.

Steps 2, 3, 4, 5, A6 and B6: The value of TIO IE (bits 5-7) of the transaction identifier (TI) is the same in these test steps.

11.3.2.5 Test requirements

At step 1a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to one of the following causes:

- Originating Streaming Call;
- Originating Interactive Call or
- Originating Background Call

Upon receipt of a request for deactivation of a PDP context from the SS, the UE shall deactivate PDP context.

If the UE has not performed a detach procedure then, upon modification procedure initiated by the network, for deactivated PDP context, UE shall reply with SM STATUS message with cause #81, as confirmation that previously SS requested PDP context deactivation was performed by the UE.

<END OF MODIFIED SECTION>

CHANGE REQUEST

34.123-1 CR 840 # rev **-** # Current version: **5.7.1**

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 2 test case 9.4.2.4 Procedure 2		
Source:	# Anritsu Limited		
Work item code:	# MISTST1	Date:	# 13/5/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# (1) There is no longer any clear requirement in the core specifications for the UE not to respond to paging by TMSI after a location update is rejected with cause "Roaming not allowed in this location area". Note: In 24.008 up to v3.9.0 clause 4.4.4.7 required the deletion of the TMSI when the location update was rejected with cause "Roaming not allowed in this location area". Changes from N1-012046 in v3.10.0 onwards removed this requirement. Thus there is no longer any explicit requirement preventing the UE responding to paging by TMSI, however the description of state MM state 19.3 in clause 4.1.2.1.2 includes "Only emergency services are offered". The core specification should therefore be considered as ambiguous on this issue. (2) In step 21 of 9.4.2.4 Procedure 2 the time allowed to check that no RRC Connection Request is sent following the attempted CM connection is 3s. This is too short as it can often take more than 3s to initiate a call.
Summary of change:	# (1) Remove the requirement not to respond to paging from the Conformance Requirement and Test Purpose sections and remove the corresponding section of the test (steps 18 to 19) from the test method. (2) Increase the time to check that no RRC Connection Request is received from 3 s to 30 s.
Consequences if not approved:	# (1) Conformant UEs may fail. (2) Non-conformant UEs may pass..

Clauses affected:	# 9.4.2.4.2, 9.4.2.4.3, 9.4.2.4.4, 9.4.2.4.5		
	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="padding: 2px 5px;">Y</td><td style="padding: 2px 5px;">N</td></tr></table>	Y	N
Y	N		

Other specs affected:	⌘	<input checked="" type="checkbox"/>	Other core specifications	⌘	34.123-3
		<input checked="" type="checkbox"/>	Test specifications		
		<input checked="" type="checkbox"/>	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.

9.4.2.4 Location updating / rejected / roaming not allowed in this location area

9.4.2.4.1 Definition

9.4.2.4.2 Conformance requirement

- 1) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:
 - 1.1 not perform periodic updating;
 - 1.2 ~~not respond to paging with TMSI~~void;
 - 1.3 reject any request from CM entity for MM connection other than for emergency call;
 - 1.4 not perform IMSI detach.
- 2) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:
 - 2.1 perform normal location updating when a new location area is entered;
 - 2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call";
 - 2.3 periodically search for its HPLMN.
- 3) The UE shall reset the list of "Forbidden location areas for roaming" when it is switched off or has its power source removed or when the USIM is removed.
- 4) The UE shall contain a list of "forbidden location areas for roaming". 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". The lists shall accommodate each 10 or more location area identifications.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.4.3 Test purposes

Test purpose 1

To test that on receipt of a rejection using the Roaming cause code, the UE ceases trying to update on that cell, that this situation continues for at least one periodic location interval period, and that the corresponding list is re-set by switching off the UE or removing its power source.

Test purpose 2

To test that if no cell is available, the UE ~~does not answer to paging with TMSI~~, rejects a request from CM entity other than for emergency calls.

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 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.

Test purpose 5

To test that if the USIM is removed the list of "forbidden location areas for roaming" is cleared.

9.4.2.4.4 Method of test

Initial conditions

The initial conditions shall be met before each of the different procedures.

- System Simulator:
 - for procedures 1, 2, 3 and 5: Two cells A and B, belonging to different location areas of the same PLMN with LAI a and b. The MCC of that PLMN is the same as that of the HPLMN. The MNC of that PLMN is different from that of the HPLMN;
 - for procedure 4: three cells A, B, C of the same PLMN which is not the HPLMN with 3 different location area codes. Cells should differ in signal strength by 10 dB with cell A being the strongest and cell C the weakest. There should be a 20 dB range between A and C. A should be set to a level of - 40 dBm;
 - IMSI attach/detach is allowed in every cell;
 - the T3212 time-out value is 1/10 hour in every cell.
- User Equipment:
 - procedures 1, 2, 3 and 5: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B;
 - procedure 4: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell A;
 - the list of "forbidden location areas for roaming" shall be empty (this may be achieved by either removing the USIM or switching the UE OFF then ON or removing the UE power source depending on ICS).

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Method to clear the list of location areas for roaming periodically.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedures

Procedure 1:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The UE is turned off and then on. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on). This procedure is performed another time but the deletion of the list is checked while removing the USIM (instead of turning off the UE).

Procedure 2:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE ~~does not answer to a paging message with TMSI~~, rejects a request from CM entity but supports an emergency call.

Procedure 3:

- The SS rejects a normal location updating 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 begin a location updating procedure on the non-allowed location areas.

Procedure 4:

- The SS accepts a periodic location updating on a cell not belonging to the HPLMN. Then when the UE attempts to perform a periodic location updating to this cell, the SS rejects this location updating with the cause value "Roaming not allowed in this location area". Two cells are then available, one belonging to the HPLMN but with the weakest level. It is checked that the UE returns to its HPLMN.

Procedure 5: If USIM removal is possible while UE is powered:

- The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The USIM is removed and inserted in the UE. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on).

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

The following procedure is used during the test:

- change_LAI (x):
 - the purpose of this procedure is to change the value of Location Area Identifier of cell x;
 - the Location Area Identifier of cell x shall be changed. The code shall be chosen arbitrarily but shall be different from any previously used in this procedure. The code shall have the same MCC as the Home PLMN and shall not have the same MNC as the Home PLMN.

Procedure 1

Step	Direction		Message	Comments
	UE	SS		
1		SS		<p>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). The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Location Updating Type = normal.</p> <p>"Reject cause" IE is "Roaming not allowed in this location area".</p> <p>The SS releases the RRC connection</p>
2		SS		
3			Void	
4			Void	
5		→	LOCATION UPDATING REQUEST	
6		←	LOCATION UPDATING REJECT	
7		SS		
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		<p>If possible (see ICS) the UE is switched off. Otherwise if possible the power is removed. Depending on what has been performed in step 11 the UE is brought back to operation and placed in an automatic mode. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</p> <p>Location Updating Type = normal.</p> <p>The SS starts integrity protection. "Mobile Identity" not IE included. The SS releases the RRC connection.</p>
12		UE		
13		SS		
14			Void	
15			Void	
16		→	LOCATION UPDATING REQUEST	
16a		SS		
17		←	LOCATION UPDATING ACCEPT	
18		SS		
19			Void	
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".				

Procedure 2

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 "Suitable neighbour cell". (see note).
2		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration". This message is sent on cell A.
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7		SS		The SS releases the RRC connection.
8			Void	
9		SS		The following messages are sent and shall be received on cell B. The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
10			Void	
11			Void	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14		SS		The SS releases the RRC connection.
15			Void	
16		SS		The SS waits for a possible location updating procedure on both cells A and B for 2 minutes.
17		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 2 minutes after the end of step 15.
18	←		PAGING TYPE 1 Void	"UE identity" = TMSI. This message is sent on cell A and on cell B.
19	UE		Void	Paging Cause: Terminating Conversational Call. The UE shall not initiate an RRC connection on cell A or on cell B. This is checked during 3 s.
20		UE		A MO CM connection is attempted.
21		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 30 s.
The following messages are sent and shall be received on cell A. Steps 22 to 31 are performed if the UE supports speech.				
22		UE		An emergency call is attempted.
23		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Emergency Call".
24			Void	
25			Void	
26	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
27	←		CM SERVICE ACCEPT	
28	→		EMERGENCY SETUP	
29	←		RELEASE COMPLETE	"Cause" = unassigned number.
30		SS		The SS releases the RRC connection.
31			Void	
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only"				

Procedure 3

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". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16	SS			Change_LAI (A) within 5 s after step 13.
The following messages are sent and shall be received on cell A.				
17	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
18	←		RRC CONNECTION SETUP	
19	→		RRC CONNECTION SETUP COMPLETE	
20	→		LOCATION UPDATING REQUEST	
21	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24	SS			Change_LAI (B) within 5 s after step 21.
The following messages are sent and shall be received on cell B.				
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	
29	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
32	SS			Change_LAI (A) within 5 s after step 29.
The following messages are sent and shall be received on cell A.				
33	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
34	←		RRC CONNECTION SETUP	
35	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
36		→	LOCATION UPDATING REQUEST	
37		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
38		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39		→	RRC CONNECTION RELEASE COMPLETE	
40		SS		Change_LAI (B) within 5 s after step 37.
The following messages are sent and shall be received on cell B.				
41		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
42		←	RRC CONNECTION SETUP	
43		→	RRC CONNECTION SETUP COMPLETE	
44		→	LOCATION UPDATING REQUEST	
45		←	LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
46		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
47		→	RRC CONNECTION RELEASE COMPLETE	
48		SS		The SS waits for a possible location updating procedure on both cells A and B for 7 minutes.
49		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 7 minutes after the end of step 47.
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Procedure 4

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell A.				
1		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes after the initial conditions have been established.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The location area identity of cell C shall be changed to that of a location area in the Home PLMN.
10		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message is sent on cell A within 7 minutes after the end of step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
15	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell C.				
18	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
22	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
23	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
24	→		RRC CONNECTION RELEASE COMPLETE	

Procedure 5

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		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3			Void	
4			Void	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7				The SS releases the RRC connection.
8			Void	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11		UE		The USIM is removed.
12		UE		The USIM is inserted into the ME.
13		SS		The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
14			Void	
15			Void	
16	→		LOCATION UPDATING REQUEST	Location Updating Type = normal.
16a		SS		The SS starts integrity protection.
17	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18		SS		The SS releases the RRC connection.
19			Void	
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.

9.4.2.4.5 Test requirement

- 1) 1.1 At step 10 in Procedure 1 the UE shall not perform periodic updating.
- 1.2 ~~At step 19 in Procedure 2 the UE shall not respond to paging with TMSI~~ Void.
- 1.3 At step 21 in procedure 2 the UE shall not initiate an RRC connection establishment.
- 1.4 After step 13 in Procedure 5 the UE shall perform location updating (at step 16; not perform IMSI detach).
- 2) 2.1 After step 9 in Procedure 2 the UE perform normal location updating (at step 12).
- 2.2 At step 23 in Procedure 2 the UE shall initiate a RRC CONNECTION REQUEST message with the establishment cause set to "Emergency call";
- 2.3 After step 14 in Procedure 4 the UE shall attempt to location updating with location updating type "periodic" (at step 21: periodically search for its HPLMN).
- 3) After step 12 in Procedure 5 the UE shall perform location updating (at step 16) when the USIM is removed.
- 4) At step 49 in Procedure 3 the UE shall not attempt to begin a location updating procedure.

CHANGE REQUEST

⌘ **34.123-1 CR 841** ⌘ rev **-** ⌘ Current version: **5.7.0** ⌘

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 P4 GMM Test Case 12.4.1.1b		
Source:	⌘ Motorola		
Work item code:	⌘ TEI Date: ⌘ 02/05/04		
Category:	⌘ F Release: ⌘ Rel-5		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>
<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>		

Reason for change:	⌘ Test case is specified for normal routing area update procedure and hence test should simulate NMO II instead of NMO I. As per 3GPP TS 24.008 section 4.7.5.1.3: In UMTS, after a routing area updating procedure, the mobile station can initiate Service Request procedure to request the resource reservation for the active PDP contexts if the resources have been released by the network or send upper layer message (e.g. ACTIVATE PDP CONTEXT REQUEST) to the network via the existing PS signaling connection. After that in UMTS, if the mobile station has indicated follow-on request pending and has a CM application request pending, it shall send an appropriate message (for example ACTIVATE PDP CONTEXT REQUEST) to the network. Upper layer signalling initiated in step 6 is still outstanding as service request fails due to RRC Connection Release. Hence, the UE may set follow-on request pending in the Routing Area Update Request in step 16
Summary of change:	⌘ Changed network mode to NMO II in the initial condition. Changed attach type and attach result to normal attach. Added statement 'FOR bit not checked' in Update Type IE of Routing Area Update Request message in step 16
Consequences if not approved:	⌘ Test as specified may incorrectly fail a conformant mobile

Clauses affected:	⌘ 12.4.1.1b
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Other specs affected:		Y	N		
	⌘		X	Other core specifications	⌘
		X		Test specifications	34.123-3
			X	O&M Specifications	
Other comments:	⌘	Applicable to R99 and later releases			

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.

12.4.1.1b 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 [I](#). 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

- The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.
- 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.
- 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 = ' Combined PS / IMS 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 = ' Combined PS <u>only</u> / IMS attached' Mobile identity = P-TMSI-1 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	

Step	Direction		Message	Comments
	UE	SS		
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' (FOR bit not checked) P-TMSI-1 signature Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 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, PS 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.

CHANGE REQUEST

34.123-1 CR 843 # rev **-** # Current version: **5.7.1**

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 III SMS Test Case 16.2.1 (Revision of T1-040548)		
Source:	# Sasken Communication Technologies Limited		
Work item code:	# TEI	Date:	# 26/04/04
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# 1. In case of PS domain SMS Service, UE will not abort the RRC Connection. 2. At Step 87 of the expected sequence RRC Connection is released without deactivating the PDP Context activated at step 76. Later at step 91 PDP Context is activated again. UE at this time will try to establish a secondary PDP context. 3. At Step 94B of the expected sequence it is mentioned that : "This message may be transmitted after this step timing" However in order to check "The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS (As per the test procedure)", need to check that DEACTIVATE PDP CONTEXT ACCEPT is sent by the Mobile within T3395 expiry.
Summary of change:	# 1. At Step 13 and 29 replaced Wait for Abort of RRC Connection from UE with SS Releases the RRC Connection. 2. After Step 86 added PDP Context Deactivation Procedure. 3. At Step 94b added following comment "This message should be transmitted within T3395 Expiry and at any Step before Step 96." Changes from T1-040548: The direction is changed from UE to SS in steps 13 and 29.
Consequences if not approved:	# A Conformant UE will fail with this testcase

Clauses affected:	# 16.2.1.4
	<input type="checkbox"/> Y <input type="checkbox"/> N

Other specs affected:	⌘	<input checked="" type="checkbox"/>	Other core specifications	⌘	34.123-1
		<input checked="" type="checkbox"/>	Test specifications		
		<input checked="" type="checkbox"/>	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.

16.2.1 SMS mobile terminated

16.2.1.1 Definition

16.2.1.2 Conformance requirements

An active UE shall be able to receive short message TPDU (SMS-DELIVER) at any time, independently of whether or not there is a PDP context in progress. A report will always be returned to the SC, confirming that the UE has received the short message.

References

3GPP TS 23.040 clauses 3.1, 9.2.3.16.

16.2.1.3 Test purpose

To verify the ability of a UE to receive and decode the SMS where provided for the point to point service.

16.2.1.4 Method of test

Initial Conditions

- System simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE shall be in GMM-state "GMM-REGISTERED";
 - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Support for session management state "PDP-ACTIVE".

Maximum number of retransmissions of an unacknowledged CP-DATA message.

Test procedure

- a) Mobile terminates establishment of Radio Resource Connection. After the completion of RRC Connection the SS authenticates the UE and activates ciphering.

After the SS receives SECURITY MODE COMPLETE, the SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU).

- b) The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.
- c) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.
- d) Steps a), b) and c) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

e) Steps a) and b) are repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 s after the last CP-DATA retransmission the SS then initiates the channel release. The 5 s is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions.

f) The SMS message store shall be cleared manually by the operator.

g) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.

The SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU). The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

h) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release. The SMS message store shall be cleared manually by the operator.

i) Steps g) and h) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

j) Step g) is repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 s after the last CP-DATA retransmission the SS initiates the channel release. The 15 s is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions (during PDP context in progress).

k) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The PDP context is cleared by the SS with a disconnect message. (The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA RPDU (SMS DELIVER TPDU) message. The information element of the CP-DATA message is RP-DATA.

The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

l) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The PDP context shall be cleared from the UE. (The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA message. The information element of the CP-DATA message is RP-DATA RPDU (SMS DELIVER TPDU).

The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5		SS		The SS starts integrity protection
6			(void)	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
8		SS		Waits max 25 s for CP-ACK
9	-->		CP-ACK	
10		SS		Waits max 60 s for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	
13		UE SS		The SS releases the RRC connection. There should be no further CP-DATA messages until the UE aborts the RRC connection (disconnection of layer 2).
14		UE		The UE shall indicate that an SM has arrived.
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
16	-->		SERVICE REQUEST	
17	<--		AUTHENTICATION AND CIPHERING REQUEST	
18	-->		AUTHENTICATION AND CIPHERING RESPONSE	
19		SS		The SS starts integrity protection
20			(void)	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
22		SS		Waits max 25 s for CP-ACK
23	-->		CP-ACK	
24		SS		Waits max 60 s for RP-ACK RPDU
25	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
26		SS		First CP-DATA message not acknowledged by SS
27	-->		CP-DATA	Retransmitted CP-DATA from UE within twice TC1M, after step 25, contains RP-ACK RPDU
28	<--		CP-ACK	Second CP_DATA message is acknowledged
29		UE SS		The SS releases the RRC connection. There should be no further CP-DATA messages until the UE aborts the RRC connection
30		UE		The UE shall indicate that an SM has arrived.
31			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
32	-->		SERVICE REQUEST	
33	<--		AUTHENTICATION AND CIPHERING REQUEST	
34	-->		AUTHENTICATION AND CIPHERING RESPONSE	
35		SS		The SS starts integrity protection
36			(void)	
37	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
38		SS		Waits max 25 s for CP-ACK

Step	Direction		Message	Comments
	UE	SS		
39	-->		CP-ACK	<p>Waits max 60 s for RP-ACK RPDU</p> <p>Contains RP-ACK RPDU</p> <p>First CP-DATA message not acknowledged by SS</p> <p>Retransmitted CP-DATA from UE within twice TC1M after step 41, contains RP-ACK RPDU</p> <p>Retransmitted CP-DATA message not acknowledged by SS</p> <p>Depending upon the maximum number of CP-DATA retransmissions implemented, step 43 and 44 may be repeated.</p> <p>The SS releases the RRC connection. The RRC connection is released after a duration of TC1M + 5 s after the last CP-DATA retransmission.</p>
40		SS		
41	-->		CP-DATA	
42		SS		
43			CP-DATA	
44		SS		
45		UE		
46		SS		
47			Void	<p>The UE shall indicate that an SM has arrived.</p> <p>A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.</p> <p>Contains RP-DATA RPDU (SMS DELIVER TPDU)</p> <p>Waits max 25 s for CP-ACK</p> <p>Waits max 60 s for RP-ACK RPDU</p> <p>Contains RP-ACK RPDU</p> <p>Deactivates an existing PDP context.</p> <p>The UE shall indicate that an SM has arrived.</p> <p>Clear the SMS message store</p> <p>A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.</p> <p>Contains RP-DATA RPDU (SMS DELIVER TPDU)</p> <p>Waits max 25 s for CP-ACK</p> <p>Waits max 60 s for RP-ACK RPDU</p> <p>First CP-DATA from UE, contains RP-ACK RPDU</p> <p>First CP-DATA message not acknowledged by SS</p> <p>Retransmitted CP-DATA message within twice TC1M after step 67, contains RP-ACK RPDU</p> <p>Second CP-DATA message is acknowledged</p> <p>Deactivates an existing PDP context.</p> <p>The SS releases the RRC connection</p> <p>The UE shall indicate that an SM has arrived.</p> <p>Clear the SMS message store</p> <p>A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.</p> <p>Contains RP-DATA RPDU (SMS DELIVER TPDU)</p> <p>Waits max 25 s for CP-ACK</p> <p>Waits max 60 s for RP-ACK RPDU</p> <p>First CP-DATA from UE, contains RP-ACK RPDU</p> <p>First CP-DATA message not acknowledged by SS</p> <p>Transmitted CP-DATA message within twice TC1M after step 82, contains RP-ACK RPDU</p> <p>Retransmitted CP-DATA message not acknowledged by SS</p>
48		UE		
49		UE		
50			(void)	
51	<--		CP-DATA	
52		SS		
53	-->		CP-ACK	
54		SS		
55	-->		CP-DATA	
56	<--		CP-ACK	
57	<--		DEACTIVATE PDP CONTEXT REQUEST	
58	-->		DEACTIVATE PDP CONTEXT ACCEPT	
59		UE		
60		UE		
61		UE		
62			(void)	
63	<--		CP-DATA	
64		SS		
65	-->		CP-ACK	
66		SS		
67	-->		CP-DATA	
68		SS		
69	-->		CP-DATA	
70	<--		CP-ACK	
71	<--		DEACTIVATE PDP CONTEXT REQUEST	
72	-->		DEACTIVATE PDP CONTEXT ACCEPT	
73		SS		
74		UE		
75		UE		
76		UE		
77			(void)	
78	<--		CP-DATA	
79		SS		
80	-->		CP-ACK	
81		SS		
82	-->		CP-DATA	
83		SS		
84	-->		CP-DATA	
85		SS		

Step	Direction		Message	Comments
	UE	SS		
86	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 83-84 may be repeated. The maximum number of retransmissions may however not exceed three.
86a	<--		DEACTIVATE PDP CONTEXT REQUEST	Deactivates an existing PDP context.
86b	-->		DEACTIVATE PDP CONTEXT ACCEPT	
87	SS			The SS releases the RRC connection. The RRC connection is released after a duration of TC1M + 15 s after the last CP-DATA retransmission.
88			(void)	
89	UE			The UE shall indicate that an SM has arrived.
90	UE			Clear the SMS message store
91	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
92			(void)	
93			(void)	
94	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
94A	<--		DEACTIVATE PDP CONTEXT REQUEST	The PDP context is deactivated by the SS. The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS.
94B	-->		DEACTIVATE PDP CONTEXT ACCEPT	This message may be transmitted after this stop-timing. This message should be transmitted within T3395 Expiry and at any Step before Step 96 .
95	SS			Waits max 25 s for CP-ACK
96	-->		CP-ACK	
97	SS			Waits max 60 s for RP-ACK RPDU
98	-->		CP-DATA	Contains RP-ACK RPDU
99	<--		CP-ACK	
100	SS			The SS releases the RRC connection
101	UE			The UE shall indicate that an SM has arrived.
102	UE			Clear the SMS message store
103	UE			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
104			(void)	
105	-->		DEACTIVATE PDP CONTEXT REQUEST	The PDP context is deactivated by the UE. The PDP context deactivation is continued in parallel to the following
106	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
107	<--		DEACTIVATE PDP CONTEXT ACCEPT	
108	-->		CP-ACK	shall be sent before 25 s after the start of step 106
109	SS			Waits max 60 s for RP-ACK RPDU
110	-->		CP-DATA	Contains RP-ACK RPDU
111	<--		CP-ACK	
112	SS			The SS releases the RRC connection
113	UE			The UE shall indicate that an SM has arrived.
114	UE			Clear the SMS message store
NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.				

Specific Message Contents

SMS DELIVER TPDU (not containing a type 0 message)

Information element	CommentValue
TP-PID	Different from Type 0: "01000000"B
TP-UDL	160
TP-UD (140 octets)	text of message (160 characters)
NOTE: The 160 characters in TP-UD shall include at least one occurrence of each character in the default alphabet (see 3GPP TS 23.038, clause 6.2.1).	

16.2.1.5 Test requirements

After step 7 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 14 UE shall indicate that an SM has arrived.

After step 27 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 30 UE shall indicate that an SM has arrived.

After step 43 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 48 UE shall indicate that an SM has arrived.

After step 51 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 59 UE shall indicate that an SM has arrived.

After step 69 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 74 UE shall indicate that an SM has arrived.

After step 84 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 89 UE shall indicate that an SM has arrived.

After step 94 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 101 UE shall indicate that an SM has arrived.

After step 106 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 113 UE shall indicate that an SM has arrived.

CHANGE REQUEST

⌘ **34.123-1 CR 844** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 34.123-1 Rel-5: Correction to package 3 SMS test case 16.1.1		
Source:	⌘ Rohde & Schwarz, Sasken, MCC160		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ 1. RRC connections should always be brought down by the SS, and not locally aborted.
	2. Merged from Sasken CR T1-040556 In this test case at Step 96 and 97 of the expected sequence release of the CC Connection and reception of the CP-ACK message can happen in any order. In the current version of 34.123-1 this is not mentioned clearly
Summary of change:	⌘ 1. The SS is given the responsibility to bring down RRC connections
	2. Merged from Sasken CR T1-040556 Added a Comment at Step 97. Removed the Steps 96 and 97b.
Consequences if not approved:	⌘ Test cases will fail conformant UE.

Clauses affected:	⌘ 16.1.1								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X	X	X	X	Other core specifications Test specifications O&M Specifications	⌘ 34.123-3
Y	N								
X	X								
X	X								
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>

16.1.1 SMS mobile terminated

16.1.1.1 Definition

16.1.1.2 Conformance requirements

An active UE shall be able to receive short message TPDU (SMS-DELIVER) at any time, independently of whether or not there is a speech or data call in progress. A report will always be returned to the SC, confirming that the UE has received the short message.

Reference

3GPP TS 23.040 clause 3.1.

16.1.1.3 Test purpose

To verify the ability of a UE to receive and decode the SMS where provided for the point to point service.

16.1.1.4 Method of test

Initial Conditions

- System simulator:
 - 1 cell, default parameters.
- User Equipment:
 - the UE shall be in MM-state "Idle, updated";
 - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Support for call control state U10.

Maximum number of retransmissions of an unacknowledged CP-DATA message.

Test procedure

- a) The UE terminates the establishment of Radio Resource Connection. After the completion of the RRC Connection the SS authenticates the UE.

After the SS receives SECURITY MODE COMPLETE, the SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU).
- b) The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.
- c) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release.
- d) Steps a), b) and c) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

e) Steps a) and b) are repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 s after the last CP-DATA retransmission the SS then initiates the channel release. The 5 s is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions.

f) The SMS message store shall be cleared manually by the operator.

g) A data or speech call is established on a DTCH with the SS and the state U10 of call control is entered.

The SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU). The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

h) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release. The SMS message store shall be cleared manually by the operator.

i) Steps g) and h) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

j) Step g) is repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 s after the last CP-DATA retransmission the SS initiates the channel release. The 15 s is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions (during a call in progress).

k) A data or speech call is established on a DTCH with the SS and the state U10 of call control shall be entered. The speech call is cleared by the SS with a disconnect message. (The call clearing is continued on the DCCH in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA RPDU (SMS DELIVER TPDU) message. The information element of the CP-DATA message is RP-DATA.

The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

l) A data or speech call is established with the SS and the state U10 of call control is entered. The speech call shall be cleared from the UE. (The call clearing is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA message. The information element of the CP-DATA message is RP-DATA RPDU (SMS DELIVER TPDU).

The SS waits a maximum of 25 s for the CP-ACK message and then a maximum of 60 s for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release.

The SMS message store shall be cleared manually by the operator.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS 34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	

Step	Direction		Message	Comments
	UE	SS		
4	-->		AUTHENTICATION RESPONSE	
5		SS		The SS starts integrity protection
6			(void)	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
8		SS		Waits max 25 s for CP-ACK
9	-->		CP-ACK	
10		SS		Waits max 60 s for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	
13		UE SS		The SS releases the RRC connection. There should be no further CP-DATA messages until the UE aborts the RRC connection.
14		UE		The UE shall indicate that an SM has arrived.
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS 34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
16	-->		PAGING RESPONSE	
17	<--		AUTHENTICATION REQUEST	
18	-->		AUTHENTICATION RESPONSE	
19		SS		The SS starts integrity protection
20			(void)	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
22		SS		Waits max 25 s for CP-ACK
23	-->		CP-ACK	
24		SS		Waits max 60 s for RP-ACK RPDU
25	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
26		SS		First CP-DATA message not acknowledged by SS
27	-->		CP-DATA	Retransmitted CP-DATA from UE within twice TC1M, after step 25, contains RP-ACK RPDU
28	<--		CP-ACK	Second CP_DATA message is acknowledged
29		SS		The SS releases the RRC connection
30		UE		The UE shall indicate that an SM has arrived.
31			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS 34.108. The IE "Paging cause" in the PAGING TYPE 1 message is set to "Terminating Low Priority Signalling". The SS verifies that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating Low Priority Signalling".
32	-->		PAGING RESPONSE	
33	<--		AUTHENTICATION REQUEST	
34	-->		AUTHENTICATION RESPONSE	
35		SS		The SS starts integrity protection
36			(void)	
37	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
38		SS		Waits max 25 s for CP-ACK
39	-->		CP-ACK	
40		SS		Waits max 60 s for RP-ACK RPDU
41	-->		CP-DATA	Contains RP-ACK RPDU
42		SS		First CP-DATA message not acknowledged by SS
43			CP-DATA	Retransmitted CP-DATA from UE within twice TC1M after step 41, contains RP-ACK RPDU
44		SS		Retransmitted CP-DATA message not acknowledged by SS
45		UE		Depending upon the maximum number of CP-DATA retransmissions implemented, step 43 and 44 may be repeated.
46		SS		The SS releases the RRC connection. The RRC connection is released after a duration of TC1M + 5 s after the last CP-DATA retransmission.
47			(void)	
48		UE		The UE shall indicate that an SM has arrived.
49		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.

Step	Direction		Message	Comments
	UE	SS		
50			(void)	
51	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
52		SS		Waits max 25 s for CP-ACK
53	-->		CP-ACK	
54		SS		Waits max 60 s for RP-ACK RPDU
55	-->		CP-DATA	Contains RP-ACK RPDU
56	<--		CP-ACK	
57	<--		DISCONNECT	Disconnect the active call
58	-->		RELEASE	
58a	←		RELEASE COMPLETE	
58b		SS		The SS releases the RRC connection
59	UE			The UE shall indicate that an SM has arrived.
60	UE			Clear the SMS message store
61		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.
62			(void)	
63	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
64		SS		Waits max 25 s for CP-ACK
65	-->		CP-ACK	
66		SS		Waits max 60 s for RP-ACK RPDU
67	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
68		SS		First CP-DATA message not acknowledged by SS
69	-->		CP-DATA	Retransmitted CP-DATA message within twice TC1M after step 67, contains RP-ACK RPDU
70	<--		CP-ACK	Second CP-DATA message is acknowledged
71	<--		DISCONNECT	Disconnect the active call
72	-->		RELEASE	
73	←		RELEASE COMPLETE	
74		SS		The SS releases the RRC connection
75	UE			The UE shall indicate that an SM has arrived.
76	UE			Clear the SMS message store
77		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.
78			(void)	
79	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
80		SS		Waits max 25 s for CP-ACK
81	-->		CP-ACK	
82		SS		Waits max 60 s for RP-ACK RPDU
83	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
84		SS		First CP-DATA message not acknowledged by SS
85	-->		CP-DATA	Transmitted CP-DATA message within twice TC1M after step 83, contains RP-ACK RPDU
86		SS		Retransmitted CP-DATA message not acknowledged by SS
87	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 85-86 may be repeated. The maximum number of retransmissions may however not exceed three.
87a	←		DISCONNECT	Disconnect the active call
87b	→		RELEASE	
87c	←		RELEASE COMPLETE	
88			(void)	
89		SS		The SS releases the RRC connection
90	UE			The UE shall indicate that an SM has arrived.
91	UE			Clear the SMS message store
92		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.
93			(void)	
94	<--		DISCONNECT	The speech call is cleared by the SS. The call clearing is continued in parallel to the following exchange of messages related to SMS.
95	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
96	SS		<u>void</u>	Waits max 25 s for CP-ACK

Step	Direction		Message	Comments
	UE	SS		
96a	→		RELEASE	UE releases the connection
96b	←←		RELEASE COMPLETE	SS completes the connection release (Step 96a and 96b may be executed after step 97)
97	-->		CP-ACK	shall be sent by UE before 25 s after the start of step 95
97b	←		RELEASE COMPLETE	void
97	→		CP-ACK	Alternatively to step 96b SS completes the connection release now.
98		SS		Waits max 60 s for RP-ACK RPDU
99		-->	CP-DATA	Contains RP-ACK RPDU
100		<--	CP-ACK	
101	UE	SS		The SS releases the RRC connection
				There should be no further CP-DATA messages until the UE aborts the RRC connection.
102		UE		The UE shall indicate that an SM has arrived.
103		UE		Clear the SMS message store
104		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.
105			(void)	
106		-->	DISCONNECT	The speech call is cleared from the UE. The call clearing is continued in parallel to the following exchange of messages related to SMS.
107		<--	CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
108		<--	RELEASE	This message is likely to be sent before all of the CP-DATA message has been sent on the DCCH.
109		-->	RELEASE COMPLETE	
110		-->	CP-ACK	shall be sent before 25 s after the start of step 107
111		SS		Waits max 60 s for RP-ACK RPDU
112		-->	CP-DATA	Contains RP-ACK RPDU
113		<--	CP-ACK	
114		SS		The SS releases the RRC connection
115		UE		The UE shall indicate that an SM has arrived.
116		UE		Clear the SMS message store
NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.				

Specific Message Contents

SMS DELIVER TPDU (not containing a type 0 message)

Information element	Comment Value
TP-PID	Different from Type 0: "01000000"B
TP-UDL	160
TP-UD (140 octets)	text of message (160 characters)
NOTE: The 160 characters in TP-UD shall include at least one occurrence of each character in the default alphabet (see 3GPP TS 23.038, clause 6.2.1).	

16.1.1.5 Test requirements

After step 7 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 14 UE shall indicate that an SM has arrived.

After step 25 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 30 UE shall indicate that an SM has arrived.

After step 43 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 48 UE shall indicate that an SM has arrived.

After step 51 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 59 UE shall indicate that an SM has arrived.

After step 67 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 75 UE shall indicate that an SM has arrived.

After step 79 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 90 UE shall indicate that an SM has arrived.

After step 95 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 102 UE shall indicate that an SM has arrived.

After step 107 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 s and CP-DATA containing RP-ACK within 60 s.

After step 115 UE shall indicate that an SM has arrived.

<END OF MODIFIED SECTION>

CHANGE REQUEST

⌘ **34.123-1 CR 845** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 P2 PLMN and RAT selection test cases in Multi-mode environment (2G/3G case)		
Source:	⌘ Anite, Anritsu, Ericsson, Motorola, Nokia, Racal Instruments, Sasken		
Work item code:	⌘ TEI Date: ⌘ 11/05/2004		
Category:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> ⌘ F Use <u>one</u> 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. </td> <td style="width: 50%; vertical-align: top;"> Release: ⌘ Rel-5 Use <u>one</u> 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) </td> </tr> </table>	⌘ F Use <u>one</u> 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 .	Release: ⌘ Rel-5 Use <u>one</u> 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)
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Reason for change:	⌘ 1) CN1 meeting #33 agreed in document N1-040242 to make the use of HPLMNwACT field optional and they have sent a LS in document N1-040441 to inform T1 on their decision. CN1 discussed that this change is applicable and can be implemented to all releases (from R99 onwards). 2) TS 31.102 does not specify "Access Technology Identifier" in EF _{LocI} (Location Information). 3) In the tables GSM cell power is specified as CPICH_Ec. 4) In TC 6.2.1.6 a change is done to ensure that a multi-RAT UE selects a cell belonging to the HPLMN on switch-ON inspite of a better cell of a UPLMN being present.
Summary of change:	⌘ 1) Test cases 6.2.1.1 Selection of the correct PLMN and associated RAT and 6.2.1.6 Selection of RAT for HPLMN; Automatic mode are updated to take into account UEs that are not using "HPLMN Selector with Access Technology" data field on the USIM. 2) In test cases 6.2.1.5 and 6.2.1.9 information in "Access Technology Identifier" field in EF _{LocI} is deleted. 3) All the tables where GSM cell power is specified as CPICH_Ec are corrected and separate tables created for GSM cells.

4) In TC 6.2.1.6 the Initial Conditions are changed to add a UPLMN.

Consequences if not approved: ⌘ Test cases are not according to core specification.

Clauses affected: ⌘ 6.2.1

Other specs affected:

	Y	N		
⌘		X	Other core specifications	⌘
	X		Test specifications	34.123-2, 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.

6.2 Multi-mode environment (2G/3G case)

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 HPLMN 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:

- ~~4.1~~i) HPLMN (if not previously selected);
 - ~~4.2~~ii) Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
 - ~~iii~~~~4.3~~ Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
 - ~~iv~~~~4.4~~ Other PLMN/access technology combinations with received high quality signal in random order;
 - ~~v~~~~4.5~~ 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, ~~and 6.4~~ and 6.5.

Cell	CPICH_Ec RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-48	-48	1	PLMN 1	GSM
Cell 2	-70	-59	1	PLMN 1	UTRAN
Cell 3	-75	-64	2	PLMN 2	UTRAN
Cell 4	-50	-50	2	PLMN 2	GSM

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}	1 st	PLMN 1	GSM
	2 nd	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}	1 st	PLMN 2	UTRAN
	2 nd	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 HPLMN 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, ~~and 6.4~~ and 6.5.

Cell	CPICH_Ec / RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP / RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 2	UTRAN
Cell 2	-48	-48	1	PLMN 2	GSM
Cell 3	-75	-64	2	PLMN 3	UTRAN
Cell 4	-50	-50	2	PLMN 3	GSM

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}	1 st	PLMN 2	UTRAN
	2 nd		GSM

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF _{LOCI}		PLMN 1	
EF _{HPLMNwAcT}	1 st	PLMN 2	UTRAN
	2 nd		

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, and 6.4 and 6.5.

Cell	CPICH_Ec [RF signal level] [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP [RF signal level] [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 3	UTRAN
Cell 2	-48	-48	1	PLMN 3	GSM
Cell 3	-75	-64	2	PLMN 4	UTRAN
Cell 4	-50	-50	2	PLMN 4	GSM
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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
EF _{PLMNwAcT}	1 st	PLMN 3	UTRAN
	2 nd	PLMN 4	GSM
EF _{OPLMNwAcT}	1 st	PLMN 5	UTRAN
	2 nd	PLMN 6	GSM

Test procedure

Method C is applied.

- The SS activates cells 1-5 and monitors the cells for random access requests from the UE.
- The UE is switched on.
- PLMN3 (UTRAN) shall be selected when the PLMN list is presented.
- The SS waits for random access requests from the UE.
- Cell 1 and Cell 2 are switched off. See note.
- PLMN4 (GSM) shall be selected when the PLMN list is presented.
- The SS waits for random access requests from the UE.
- Cell 4 and Cell 3 are switched off. See note.
- PLMN5 (UTRAN) shall be selected when the PLMN list is presented.
- 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, and 6.4 and 6.5.

Cell	CPICH_Ec_RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP RF signal level [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-72	-59	1	PLMN 5	UTRAN
Cell 2	-48	-48	1	PLMN 5	GSM
Cell 3	-75	-64	2	PLMN 6	UTRAN
Cell 4	-50	-50	2	PLMN 6	GSM
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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
EF _{PLMNwAcT}	1 st	PLMN 3	UTRAN
	2 nd	PLMN 4	GSM
EF _{OPLMNwAcT}	1 st	PLMN 5	UTRAN
	2 nd	PLMN 6	GSM

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 (1st 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 (2nd 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 be 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 /RF signal level [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP /RF signal level [dBm] (TDD)	High Quality signal	Test Channel	PLMN	Radio Access Technology
Cell 1	-80	-74	Yes	1	PLMN 7	UTRAN
Cell 2	-65	-65	Yes	4	PLMN 8	GSM
Cell 3	-80	-69	Yes	2	PLMN 9	UTRAN
Cell 4	-65	-65	Yes	3	PLMN 11	GSM

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	UTRAN
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 HPLMN 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. 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.~~

~~3.2.~~ Automatic Network Selection Mode Procedure:

The MS selects and attempts registration on other PLMNs, if available and allowable in the following order:

- ~~i)3.1~~ HPLMN (if not previously selected);
- ~~ii)3.2~~ Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- ~~iii)3.3~~ Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- ~~iv)3.4~~ Other PLMN/access technology combinations with received high quality signal in random order;
- ~~v)3.5~~ 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.

[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.~~

~~3. 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, ~~and 6.4~~ and 6.5.

Cell	CPICH_Ec RF <u>RF signal level</u> [dBm/3.84 MHz] (FDD)	P-CCPCH_RSCP RF <u>RF signal level</u> [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 2	UTRAN
Cell 2	-48	-48	1	PLMN 2	GSM
Cell 3	-60-75	-60-64	2	PLMN 3	UTRAN
Cell 4	-50	-50	2	PLMN 3	GSM

<u>Cell</u>	<u>RF signal level [dBm]</u>	<u>Test Channel</u>	<u>PLMN</u>	<u>Radio Access Technology</u>
<u>Cell 2</u>	<u>-48</u>	<u>1</u>	<u>PLMN 2</u>	<u>GSM</u>

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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
EF _{PLMNwAcT}	1 st	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}	1 st	PLMN 2	UTRAN
	2 nd		
EF _{PLMNwAcT}	1 st	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 1-4.3 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 (~~2nd priority RAT for EF_{HPLMNwAcT}~~). 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). (~~PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE supported RATs.~~)

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, ~~and 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 [RF signal level] [dBm/3.84 MHz] (FDD)	P-CCPCH [RF signal level] [dBm] (TDD)	Test Channel	PLMN	Radio Access Technology
Cell 1	-70	-59	1	PLMN 3	UTRAN
Cell 2	-48	-48	1	PLMN 3	GSM
Cell 3	-75	-64	2	PLMN 4	UTRAN
Cell 4	-50	-50	2	PLMN 4	GSM
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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
EF _{PLMNwAcT}	1 st	PLMN 3	UTRAN
	2 nd	PLMN 4	GSM
EF _{OPLMNwAcT}	1 st	PLMN 5	UTRAN
	2 nd	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, ~~and 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 2	-48	-48	1	PLMN 5	GSM
Cell 3	-75	-64	2	PLMN 6	UTRAN
Cell 4	-50	-50	2	PLMN 6	GSM
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}	1 st	PLMN 2	UTRAN
	2 nd	PLMN 2	GSM
EF _{PLMNwAcT}	1 st	PLMN 3	UTRAN
	2 nd	PLMN 4	GSM
EF _{OPLMNwAcT}	1 st	PLMN 5	UTRAN
	2 nd	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 c), 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.

6.2.1.9 Selection of "Other PLMN / access technology combinations"; Automatic mode

6.2.1.9.1 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".

6.2.1.9.2 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.

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.

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.

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 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 4.4.3.1.1.
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.

6.2.1.9.3 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".

6.2.1.9.4 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.

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	-69	Yes	1	PLMN 7	UTRAN
Cell 2	-65	-65	Yes	1	PLMN 8	GSM
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

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN	Access Technology Identifier
EF _{Loc1}		PLMN 7	UTRAN

Test procedure

Method C is applied.

- a) The SS activates cells 1-3 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) The cell on which a response was received, is switched off.

e) Step c-d) is repeated until the UE informs that no network is available.

6.2.1.9.5 Test Requirements

- 1) In step c), the displayed PLMN is noted.
- 2) When the test procedure has finished, the noted PLMNs shall have appeared in the following order: PLMN7 first, then PLMN8 or PLMN9 in random order.

CHANGE REQUEST

№ **34.123-1 CR 852** № rev **1** № Current version: **5.7.1** №

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 6 new Inter-RAT test cases (Revision of T1-040977).		
Source:	№ Sasken Communication Technologies Ltd.,		
Work item code:	№ TEI	Date:	№ 28/04/2004
Category:	№ F	Release:	№ REL-5

Reason for change:	№ Current version of the specification does not have test cases that cover: <ol style="list-style-type: none">1. To confirm that the UE shall select the GSM cell when RRC Connection Reject with Inter-RAT info set to GSM is received in response to RRC connection request.2. To confirm that the UE, upon receiving RRC Connection Reject with Inter-RAT info set to GSM and failing to select the designated GSM system, shall reselect UTRAN cell only after the wait time specified in RRC Connection Reject.3. To confirm that the UE retransmits NAS message in the new RAT, if Inter-RAT handover from UTRAN occurs before the successful delivery of the INITIAL DIRECT TRANSFER message is confirmed by the RLC.4. To confirm that the UE retransmits NAS message in the new RAT, if the Inter-RAT handover from UTRAN occurs before the successful delivery of the UPLINK DIRECT TRANSFER message is confirmed by RLC.5. To confirm that the UE aborts the signalling connection in the new RAT when the Inter-RAT handover from UTRAN procedure occurs before the confirmation of the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message by RLC<u>6.3.</u> To confirm that a multi-RAT UE responds with a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the UTRAN and it includes the inter-RAT-specific UE radio access capability information element.
Summary of change:	№ <u>6.3</u> new test cases are added to the specification.

Changes from T1-040590:

1. Verification of wait time behaviour has been removed from the test case 8.1.2.12.
2. The test case now handles an MO call instead of an MT call. After the UE selects GSM cell an MO call is established.

Changes from T1-040952:

Security mode control procedure is added for the test case 8.1.6.6. This procedure is invoked before the UE sends UDT transporting the SETUP message.

Changes from T1-040977:

1. Removed the test cases 8.1.6.5, 8.1.6.6 and 8.1.9c.
2. Added 2 new ICS/IXIT statements for test cases 8.1.2.12 and 8.1.2.13
3. Modified the initial conditions of all the test cases to include Cell 9 in the Inter-RAT cell info list of Cell 1 and include Cell 1 in the 3G Neighbour cell description list for Cell 9.
4. 8.1.2.12: removed "UTRAN is better cell of the two" from the initial condition as the verification of cell reselection after wait time has been removed.

Consequences if not approved: ☞ These features of the UE will remain untested.

Clauses affected: ☞ 8.1.2, ~~8.1.6~~, ~~8.1.9~~ and 8.1.5

Other specs Affected:	☞	<input type="checkbox"/> Y	<input type="checkbox"/> N	Other core specifications	☞	34.123-1	
		<input checked="" type="checkbox"/> X	<input type="checkbox"/>				Test specifications
		<input type="checkbox"/>	<input checked="" type="checkbox"/> X				O&M Specifications

Other comments: ☞

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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

FIRST MODIFIED SECTION

8.1.2.12 RRC Connection Establishment: Reject with interRATInfo is set to GSM

8.1.2.12.1 Definition

8.1.2.12.2 Conformance requirement

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL_UE_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall:

1> stop timer T300; and

1> clear the entry for the RRC CONNECTION REJECT message in the table "Accepted transactions" in the variable TRANSACTIONS;

...

1> if the IE "inter-RAT info" is present and:

2> if V300 is equal to or smaller than N300:

3> select a suitable cell belonging to the selected PLMN or any PLMN indicated to be equivalent to that PLMN in the designated RAT;

3> after having selected and camped on a suitable cell on the designated RAT:

4> disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed.

8.1.2.12.3 Test Purpose

To verify that the UE shall select the GSM cell when RRC Connection Reject with Inter-RAT info set to GSM is received in response to RRC connection request.

Reference

3GPP TS 25.331, section 8.1.3.9

8.1.2.12.4 Method of test

Initial condition

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 Inter-RAT Cell Info List of Cell 1 refers to Cell 9. The 3G Neighbour Cell Description List of Cell 9 refers to Cell 1.

UE: Idle state (state 2) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies.
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

- PS Supported yes/no
- Support of automatic PS attach procedure at switch on yes/no

Test procedure

The UE transmits an RRC CONNECTION REQUEST message for making an MO call. After the SS receives this message, it transmits an RRC CONNECTION REJECT message with interRATInfo set to "GSM" and wait time set to 10 seconds. UE then selects GSM cell specified in SIB11 and sends a CHANNEL REQUEST for making an MO call. RR connection is successfully established. Thereafter an MO call is established in the GSM cell.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				Prompt the operator to make an outgoing call.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION REJECT	See specific message contents.
4	UE			UE selects the GSM cell specified in the SIB11.
5	→		CHANNEL REQUEST	UE requests for RR connection to establish the MO call.
6	←		IMMEDIATE ASSIGNMENT	RR connection is established. Thereafter UE proceeds with the MO call establishment. SS completes the call establishment procedure.
7		SS		It is verified that the MO call is successfully established by sending a STATUS ENQUIRY message. The UE shall respond with a STATUS message indicating that it is in state U10.

Specific message contents

RRC CONNECTION REJECT in step 4:

<u>Wait time</u>	<u>10 seconds</u>
<u>Redirectioninfo</u> <u>InterRATInfo</u>	<u>GSM</u>

8.1.2.12.5 Test requirement

- 1) At step 5, UE should respond on GSM cell.
- 2) At step 7, UE should be in CC state U10 in the GSM cell.

8.1.2.13 RRC Connection Establishment: Reject with InterRATInfo is set to GSM and selection to the designated system fails

8.1.2.13.1 Definition

8.1.2.13.2 Conformance requirement

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL_UE_IDENTITY;

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall:

1> stop timer T300; and

1> clear the entry for the RRC CONNECTION REJECT message in the table "Accepted transactions" in the variable TRANSACTIONS;

...

1> if the IE "inter-RAT info" is present and:

2> if V300 is equal to or smaller than N300:

3> if no suitable cell in the designated RAT is found:

4> wait at least the time stated in the IE "wait time";

4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.

4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;

4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;

4> increment counter V300;

4> 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> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;

3> consider the RRC establishment procedure to be unsuccessful;

3> the procedure ends.

8.1.2.13.3 Test Purpose

To verify that the UE upon receiving RRC Connection Reject with Inter-RAT info set to GSM and failing to select the designated GSM system, shall reselect UTRAN cell only after the wait time specified in RRC Connection Reject. The UE shall then continue with the RRC CONNECTION establishment procedure.

Reference

3GPP TS 25.331, section 8.1.3.9

8.1.2.13.4 Method of test

Initial conditions

System Simulator: 2 cells - Cell 1 is UTRAN, the value of N300 is set to 1. Cell 9 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 9. The Inter-RAT Cell Info List of Cell 1 refers to Cell 9. The 3G Neighbour Cell Description List of Cell 9 refers to Cell 1.

UE: Idle state (state 2) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies.
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.
- PS Supported yes/no
- Support of automatic PS attach procedure at switch on yes/no

Test procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by making an outgoing call. After the SS receives this message, it transmits an RRC CONNECTION REJECT message with interRATInfo set to "GSM" and wait time set to 10 seconds. The GSM cell is switched off, therefore UE fails to select the GSM cell. UE reselects UTRAN cell only after waiting for duration specified in wait time. It then retransmits RRC CONNECTION REQUEST.

Expected sequence

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>				<u>Prompt the operator to make an outgoing call.</u>
<u>2</u>	<u>→</u>		<u>RRC CONNECTION REQUEST</u>	<u>Shall be sent on CCCH and contain the correct establishment cause.</u>
<u>3</u>		<u>←</u>	<u>RRC CONNECTION REJECT</u>	<u>See specific message contents.</u>
<u>4</u>				<u>Cell 9 is switched off</u>
<u>5</u>	<u>→</u>		<u>RRC CONNECTION REQUEST</u>	<u>SS verifies that RRC connection is received only after wait time.</u>
<u>6</u>		<u>←</u>	<u>RRC CONNECTION REJECT</u>	<u>SS sends the message to bring the UE to idle mode.</u>

Specific message contents

RRC CONNECTION REJECT in step 3:

<u>Wait time</u> <u>Redirectioninfo</u> <u>InterRATInfo</u>	<u>10 seconds</u> <u>GSM</u>
---	---------------------------------

8.1.2.13.5 Test requirement

1) At step 5, RRC connection request is received after wait time.

NEXT MODIFIED SECTION

8.1.5.6 UE Capability Information/ Reporting Of InterRAT Specific UE RadioAccessCapability.

8.1.5.6.1 Definition

8.1.5.6.2 Conformance requirement

The UE shall initiate the UE capability update procedure in the following situations:

1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;

...

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

1> include the IE "RRC transaction identifier"; and

1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;

1> retrieve its UTRA UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and

1> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE_CAPABILITY_REQUESTED;

1> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE_CAPABILITY_REQUESTED; and

1> include this in IE "UE system specific capability".

Reference

3GPP TS 25.331 clauses 8.1.6

8.1.5.6.3 Test purpose

To confirm that a multi-RAT UE responds with a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the UTRAN and it includes the inter-RAT-specific UE radio access capability information element.

8.1.5.6.4 Method of test

Initial Condition

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 Inter-RAT Cell Info List of Cell 1 refers to Cell 9. The 3G Neighbour Cell Description List of Cell 9 refers to Cell 1.

UE: CELL_DCH state (state 6-9) as specified in clause 7.4 of TS 34.108

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies.
- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Test Procedure

The SS starts the GSM and UTRAN cell .The UE is brought into the CELL_DCH state after a successful outgoing call attempt on the UTRAN cell. The SS transmits a UE CAPABILITY ENQUIRY message with System Specific Cap Update Req set to GSM. The UE shall respond with a UE CAPABILITY INFORMATION message on the uplink DCCH that includes the requested capabilities. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH 6-9 state after an outgoing call has been established successfully.
2		←	UE CAPABILITY ENQUIRY	See specific message contents
3		→	UE CAPABILITY INFORMATION	See specific message contents
4		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2)

Use the UE CAPABILITY ENQUIRY message as defined in (TS 34.108) Clause 9, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
Capability update requirement - UE radio access FDD capability update requirement	TRUE
- UE radio access TDD capability update requirement	FALSE
- System specific capability update requirement list	GSM

UE CAPABILITY INFORMATION (Step 3)

Check to see if the same message type found in (TS 34.108) Clause 9 is received, with the following exceptions:

<u>Information Element</u>	<u>Value/remark</u>
UE_RadioAccessCapability	This IE should reflect the corresponding fdd capability and the IE UE_MultimodeRATCapability should indicate GSM capability according to PICS .
InterRAT_UE_RadioAccessCapability	GSM GSM Classmark 2 GSM Classmark 3 Presence and value will be checked. Stated capability must be compatible with 34.123-3 (ICS statements) and the user settings

8.1.5.6.5 Test requirement

After step 2 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the UE CAPABILITY ENQUIRY message as per the specific message contents.

CHANGE REQUEST

⌘ **TS34.123-1 CR 849** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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:	⌘ Add HCR TDD content of Inter-frequency measurement for event 2D and 2F		
Source:	⌘ InterDigital Communications Corp.		
Work item code:	⌘ HCR TDD	Date:	⌘ 15/03/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘	1. During test, some IEs of MEASUREMENT CONTROL and MEASUREMENT REPORT messages are different between FDD and TDD. 2. Editorial changes
Summary of change:	⌘	In Clause 8.4.1.26: 1) Test Purpose is updated; 2) In "Test Procedure", Table 8.4.1.26-1 is updated; 3) Adding the specific message contents of MEASUREMENT CONTROL and MEASUREMENT REPORT for TDD ; 4) Test Requirement is updated; including changes to agree with FDD changes in T1#23 T1-040731 5) Editorial changes
Consequences if not approved:	⌘	If changes are not approved, UE of TDD mode cannot be tested.

Clauses affected:	⌘	8.4.1.26								
Other specs affected:	⌘	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N									
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<input type="checkbox"/>	<input checked="" type="checkbox"/>									
<input type="checkbox"/>	<input checked="" type="checkbox"/>									
Other comments:	⌘	Affects Rel-4 and Rel-5 test cases.								

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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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2d}$ is the absolute threshold that applies for the used frequency and event 2d.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

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:

Q_{Used} is the quality estimate of the used frequency.

$T_{Used\ 2f}$ is the absolute threshold that applies for the used frequency and event 2f.

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". ~~This MEASUREMENT REPORT message shall contain at least the best primary CPICH info(for FDD) or primary CCPCH info(for TDD)on the 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". ~~This MEASUREMENT REPORT message shall contain at least the best primary CPICH info(for FDD) or primary CCPCH info(for TDD)on the 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
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

<ul style="list-style-type: none"> - CHOICE measurement type - Inter-frequency measurement objects list <ul style="list-style-type: none"> - Inter-frequency cell removal - New inter-frequency info list <ul style="list-style-type: none"> - Inter-frequency cell id - Frequency Information - Cell info <ul style="list-style-type: none"> - Cell individual offset - Reference time difference to cell - Read SFN Indicator - CHOICE mode <ul style="list-style-type: none"> - Primary CCPCH Info <ul style="list-style-type: none"> - CHOICE Mode <ul style="list-style-type: none"> - CHOICE TDD option <ul style="list-style-type: none"> - TSTD indicator - Cell parameters ID - SCTD indicator - Primary CCPCH TX power - Timeslot list - Cell for measurement - Inter-frequency measurement quantity <ul style="list-style-type: none"> - CHOICE reporting criteria <ul style="list-style-type: none"> - Filter Coefficient - CHOICE mode - Measurement quantity for frequency quality estimate - Inter-frequency reporting quantity <ul style="list-style-type: none"> - UTRAN Carrier RSSI - Frequency quality estimate - Non frequency related quantities - Cell synchronisation information reporting indicator - Cell identity reporting indicator - CHOICE mode <ul style="list-style-type: none"> - Timeslot ISCP reporting indicator - Proposed TGSN reporting indicator - Primary CCPCH RSCP reporting indicator - Pathloss reporting indicator - Measurement validity - CHOICE report criteria <ul style="list-style-type: none"> - Parameters required for each events <ul style="list-style-type: none"> - Inter-frequency event identity <ul style="list-style-type: none"> - Threshold used frequency - W used frequency - Hysteresis - Time to trigger - Reporting cell status - Maximum number of reported cells - Inter-frequency event identity <ul style="list-style-type: none"> - Threshold used frequency - W used frequency - Hysteresis - Time to trigger - Reporting cell status - Maximum number of reported cells - DPCH compressed mode status info 	<p>Inter-frequency measurement</p> <p>Not present</p> <p>Any valid identity other than that of Cell 1 Any valid frequency other than that of Cell 1</p> <p>0</p> <p>Not present</p> <p>FALSE</p> <p>TDD</p> <p>TDD</p> <p>1.28 Mcps TDD</p> <p>FALSE</p> <p>Any value of Cell parameters ID</p> <p>FALSE</p> <p>Not present</p> <p>Not present</p> <p>Not present</p> <p>Inter-frequency reporting criteria</p> <p>4</p> <p>TDD</p> <p>P-CCPCH RSCP</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>FALSE</p> <p>CELL_DCH state</p> <p>Inter-frequency measurement reporting criteria</p> <p>2D</p> <p>-70 dBm</p> <p>0</p> <p>1 dB</p> <p>5000 mSec</p> <p>Report cells within active set</p> <p>2</p> <p>2F</p> <p>-70 dBm</p> <p>0</p> <p>1 dB</p> <p>5000 mSec</p> <p>Report cells within active set</p> <p>2</p> <p>Not present</p>
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MEASUREMENT CONTROL (Step 4) (3.84 Mcps TDD)

<u>Information Element</u>	<u>Value/remark</u>
Measurement identity	10
Measurement command	Setup
Measurement reporting mode	Unacknowledged Mode RLC
- Measurement reporting transfer mode	Event trigger
- Periodic reporting / Event trigger reporting mode	Not present
Additional measurement list	

- 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)_(~~1.28~~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	Check to see if set to Inter-frequency measurement
- CHOICE event results	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)_(~~1.28~~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	Check to see if set to Inter-frequency measurement
- CHOICE event results	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. ~~IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for 1.28 Mcps TDD) of Cell 1.~~
2. In step 7 the UE shall send MEASUREMENT REPORT message indicating event 2D. ~~IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code (for FDD) or Cell parameters ID (for 1.28 Mcps TDD) of Cell 1.~~

CR-Form-v7
CHANGE REQUEST
№ 34.123-1 CR 850 № rev - № Current version: 5.7.1 №

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:	№ Change to Test Requirement of Cell Reselection Case: 8.3.9.1(Revision of T1-040588)		
Source:	№ Sasken Communication Technologies Ltd.,		
Work item code:	№ TEI	Date:	№ 28/04/2004
Category:	№ F	Release:	№ REL-5

Reason for change:	№ The UE is in 6-11 state initially. This means that UE is in PMM-CONNECTED state. According to Section 4.7.1.7 in 24.008, if the UE is in PMM-CONNECTED mode in UMTS, then it shall perform a RA update procedure on reselection to a new GSM cell.
Summary of change:	№ In Step f), a Routing Area Update is expected along with the Channel Request. Changes from T1-040588: In Step f), an IMMEDIATE ASSIGNMENT REJECT is sent in response to the Channel Request to bring the UE to idle mode. The test procedure would complete before RAU procedure is reinitiated again.
Consequences if not approved:	№ Incorrect test sequence.

Clauses affected:	№ 8.3.9.1.5						
Other specs Affected:	<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	№ 34.123-1 clause 8.3.9.1
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> <td style="padding: 2px;"><input type="checkbox"/></td> </tr> </table>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications				
<input checked="" type="checkbox"/>	<input type="checkbox"/>						
<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications				
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
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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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

8.3.9.1 Cell reselection if cell becomes barred or $S < 0$; UTRAN to GPRS (CELL_FACH)

8.3.9.1.1 Definition

Test to verify that if both a GSM/GPRS and UTRAN network is available, the UE performs cell reselection from UTRAN to GSM/GPRS if the UTRAN cell becomes barred or S falls below zero.

8.3.9.1.2 Conformance requirement

1. The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).
2. This procedure is applicable in states CELL_FACH, CELL_PCH or URA_PCH. When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:
 - 1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:
 - 2> initiate the establishment of a connection to the target radio access technology according to its specifications.
 3. When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:
 - 1> release all UTRAN specific resources.

References

TS 25.331, clause 8.3.9

8.3.9.1.3 Test purpose

1. To verify that the UE performs reselection from UTRAN to GPRS in the state CELL_FACH on the following occasions:
 - Serving cell becomes barred.
 - $S < 0$ for serving cell.
2. To verify when the UE has succeeded in reselecting a cell in the target radio access technology and has initiated the establishment of a connection, it shall release all UTRAN specific resources.

8.3.9.1.4 Method of test

Initial conditions

System Simulator: 3 cells – Cell 1 is UTRAN FDD, Cell 2 is GPRS and Cell 3 is GSM. 51.010 clauses 20.22 and 40.1.1 shall be referenced for the default parameters of cell 2. 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 3.

All cells belong to the same PLMN and location area.

The Inter-RAT Cell Info List of Cell 1 (UTRAN) refers to Cell 2 (GPRS) and Cell 3 (GSM).

The 3G Neighbour Cell Description of Cell 2 (GPRS) and Cell 3 (GSM) refers to Cell 1 (UTRAN). UE: PS-DCCH+DTCH_FACH (State 6-11) 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,

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
CPICH Ec (FDD)	dBm	-60
P-CCPCH RSCP (TDD)	dBm	-60
Qrxlevmin	dBm	-101
Srxlev*	dBm	41
CellBarred		Not barred

Parameter	Unit	Cell 2 (GPRS)
Test Channel		1
RF Signal Level	dBm	-75
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	25
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Parameter	Unit	Cell 3 (GSM)
Test Channel		2
RF Signal Level	dBm	-85
RXLEV_ACCESS_MIN	dBm	-100
C1*	dBm	15
FDD_Qmin	dB	-20
FDD_Qoffset	dBm	0

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		Not barred -> Barred
Tbarred	S	80

Step i:

Parameter	Unit	Cell 1 (UTRAN)
Qrxlevmin	DB	-101 -> -41
Srxlev*	DB	41 -> -19

Test procedure

- a) The SS activates cells 1, 2, and 3. The SS monitors cells 1, 2 and 3 for random access requests from the UE.
- b) The UE is switched on.

- c) The SS brings the UE to PS-DCCH+DTCH_FACH (State 6-11).
- d) The SS sets Cell 1 to be barred.
- e) The SS sends SYSTEM INFORMATION CHANGE INDICATION message to UE to inform UE of the modification in the system information.
- f) The SS waits for channel request from the UE ~~to establish a Temporary Block flow~~. SS sends an IMMEDIATE ASSIGNMENT REJECT to bring the UE to idle mode.
- g) The SS pages the UE with PAGING TYPE 2 in Cell 1 (UTRAN), if UE does not respond by transmitting an upper layer message to answer this page, it means UE has released the UTRAN resources.
- h) The UE is switched off.
- i) Step a-e) is repeated with the same initial conditions except that in step d), Qrxlevmin is increased, so S will become negative instead of being barred.

8.3.9.1.5 Test Requirements

In step f), the UE shall respond on Cell 2

In step g), the UE shall not respond in UTRAN cell.

In step i), the UE shall respond on Cell 2 after Qrxlevmin is increased.

CR-Form-v7

CHANGE REQUEST

⌘ **34.123-1 CR 851** ⌘ rev **-** ⌘ Current version: **5.7.1** ⌘

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 low priority TC 11.1.2		
Source:	⌘ NEC Corporation		
Work item code:	⌘ TEI	Date:	⌘ 12/05/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> 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: ⌘	<ol style="list-style-type: none"> 1. Implementation of this test case requires PS RABs for multiple PDP contexts simultaneously active. Currently, there are PS RABs which can be used for one and two simultaneously active PDP contexts. PS RABs for three, four, five, six and seven simultaneously active PDP contexts are required to be defined in 34.108. Based on the discussion with MCC-160, Ericsson, Nortel, Anritsu, Nokia and Docomo there is common understanding that no real-life scenario corresponding to multiple PDP contexts exists today, so additional RABs in 34.108 would only be used for testing. 2. Statements <ul style="list-style-type: none"> - Network requested PDP context activation supported yes/no - Number of network initiated PDP contexts supported in 'Related ICS/IXIT statements' can be eliminated by merging Case 1 and Case 2
Summary of change: ⌘	<ol style="list-style-type: none"> 1. Case 1 and Case 2 are merged 2. 'Related ICS/IXIT statements' is updated 3. Test case is limited to two PDP contexts so that implementation can progress without adding new RABs in 34.108.
Consequences if not approved: ⌘	<ol style="list-style-type: none"> 1. Five more PS RABs need to be defined in 34.108.

Clauses affected:	⌘	11.1.2								
Other specs affected:	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td></td></tr></table>	Y	N		X			Other core specifications	⌘ 34.123-2, 34.123-3
		Y	N							
			X							
	Test specifications									
	O&M Specifications									
Other comments:	⌘	Affects REL-5, REL-4 and R99.								

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11.1.2 PDP context activation requested by the network, successful and unsuccessful

11.1.2.1 Definition

~~This test needs to take into account the number of active PDP contexts supported simultaneously by the UE, to be able to test the response when all contexts are activated and the network tries to initiate a new context.~~

11.1.2.2 Conformance requirement

1) Successful PDP context activation requested by the network

In order to request a PDP context activation, the network sends a REQUEST PDP CONTEXT ACTIVATION message to the UE and starts timer T3385. The message contains an offered PDP address. If available, the APN shall be included in the REQUEST PDP CONTEXT ACTIVATION message.

Upon receipt of a REQUEST PDP CONTEXT ACTIVATION message, the UE shall then either initiate the PDP context activation procedure as described in 3GPP TS 24.008 clause 6.1.3.1.1, or shall reject the activation request by sending a REQUEST PDP CONTEXT ACTIVATION REJECT message as described in 3GPP TS 24.008 clause 6.1.3.1.4. The value of the reject cause IE of the REQUEST PDP CONTEXT ACTIVATION REJECT message shall indicate the reason for rejection, e.g. "insufficient resources to activate another context".

The ACTIVATE PDP CONTEXT REQUEST message sent by the UE in order to initiate the PDP context activation procedure shall contain the PDP address, PDP Type and APN requested by the network in the REQUEST PDP CONTEXT ACTIVATION message.

Upon receipt of the ACTIVATE PDP CONTEXT REQUEST message, the network shall stop timer T3385.

The same procedures then apply as described for UE initiated PDP context activation (3GPP TS 24.008, clause 6.1.3.1.1).

2) Unsuccessful PDP context activation requested by the network

Upon receipt of the REQUEST PDP CONTEXT ACTIVATION message, the UE may reject the network requested PDP context activation by sending the REQUEST PDP CONTEXT ACTIVATION REJECT message to the network. The message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION and an additional cause code that typically indicates one of the following causes:

#26: insufficient resources;

#31: activation rejected, unspecified;

#40: feature not supported; or

#95 – 111: protocol errors.

The network shall stop timer T3385 and enter state PDP-INACTIVE.

3) Whenever a REQUEST PDP CONTEXT ACTIVATION message is received by the UE specifying a transaction identifier relating to a PDP context not in state PDP-INACTIVE, the UE shall locally deactivate the old PDP context relating to the received transaction identifier. Furthermore, the UE shall continue with the activation procedure of a new PDP context as indicated in the received message.

Reference

3GPP TS 24.008 clauses 6.1.3.1.2, 6.1.3.1.4 and 8.3.2.f).

11.1.2.3 Test purpose

To test behaviour of the UE upon receipt of a PDP context activation request from the SS:

- a) When UE supports PDP context activation requested by the network
- b) When UE supporting PDP context activation requested by the network, receives REQUEST PDP CONTEXT ACTIVATION message with transaction identifier relating to an already active PDP context
- c) When UE does not support PDP context activation requested by the network

11.1.2.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Related ICS/IXIT statements

- PS Supported yes/no
- ~~—Network requested PDP context activation supported— yes/no~~
- ~~—Number of network initiated PDP contexts supported~~

Case 4

~~For a UE that supports PDP context activation requested by the network.~~

Test procedure

A REQUEST PDP CONTEXT ACTIVATION message is sent by the SS. If UE does not accept PDP context activation, it shall send a REQUEST PDP CONTEXT ACTIVATION REJECT message (UE behaviour type B) , else UE will start PDP context activation procedure (UE behaviour type A).

On receipt of the ACTIVATE PDP CONTEXT REQUEST message from the UE, an ACTIVATE PDP CONTEXT ACCEPT message is returned by the SS. This is repeated until the maximum number of PDP contexts supported by the UE is activated (up to two).

~~If the UE cannot support seven PDP contexts then one greater than the maximum supported by the UE should be requested.~~ When maximum number of PDP contexts is reached, UE shall reject next REQUEST PDP CONTEXT ACTIVATION message.

In response to the last activation request the UE shall return a REQUEST PDP CONTEXT ACTIVATION REJECT message with cause set to 'insufficient resources', 'activation rejected, unspecified', 'feature not supported' or 'protocol errors' using cause values #26, #31, #40 or #95-111.

REQUEST PDP CONTEXT ACTIVATION message is then sent by the SS using transaction identifier of the currently active PDP context. The UE shall activate this context in to replace ~~of~~ the previous context.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	REQUEST PDP CONTEXT ACTIVATION	SS sends Request a PDP context activation to UE and starts timer T3385. UE behaviour type B: test case continues from Step 6
A2		→	ACTIVATE PDP CONTEXT REQUEST	UE behaviour type A : UE replies with a PDP context activation request, Traffic class set to Streaming class or Interactive class or Background class
A2a		SS		The SS stops timer T3385 and establishes the Radio Access Bearer.
A3		←	ACTIVATE PDP CONTEXT ACCEPT	SS accepts the PDP context activation. If maximum number of PDP contexts of 2 (in future implementations this number might change) is reached, test execution continues from Step A5.
A4		SS		Steps 1, A2 , A2a and A3 are repeated for until maximum number of PDP contexts is reached, the number of Network Initiated contexts supported using various values for Traffic class IE. NOTE: In future implementations, if all 7 contexts are supported-activated steps A5 , 6 and 6a should shall not be performed.
A5		←	REQUEST PDP CONTEXT ACTIVATION	SS requests a PDP context activation and starts timer T3385
6		→	REQUEST PDP CONTEXT ACTIVATION REJECT	The PDP context activation request is rejected with cause 'insufficient resources' or 'activation rejected, unspecified' or ' feature not supported ' or 'protocol errors' using cause values #26, #31, #40 or #95-111.
6a		SS		The SS stops timer T3385. UE behaviour type B: test case ends.
A7		←	REQUEST PDP CONTEXT ACTIVATION	SS requests a PDP context activation for an existing PDP context with TI the same TI value as one of the active PDP contexts and starts timer T3385
A8		UE		UE locally deactivates the old PDP context with the same TI value
A9		→	ACTIVATE PDP CONTEXT REQUEST	UE continues with the activation of a new PDP context to replace locally deactivated PDP context
A9a		SS		The SS stops timer T3385 and releases Radio Access Bearer for old PDP context.
A9b		SS		The SS stops timer T3385 and establishes the Radio Access Bearer for new PDP context.
A10		←	ACTIVATE PDP CONTEXT ACCEPT	SS accepts the PDP context activation

Case 2

~~For an UE that does not support PDP context activation requested by the network.~~

Test procedure

~~A REQUEST PDP CONTEXT ACTIVATION message is sent by the SS. The UE shall then send a REQUEST PDP CONTEXT ACTIVATION REJECT message.~~

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	REQUEST PDP CONTEXT ACTIVATION	SS requests a PDP context activation and starts timer T3385
2		→	REQUEST PDP CONTEXT ACTIVATION REJECT	Reject the PDP context activation request with cause 'insufficient resources' or 'feature not supported', 'activation rejected, unspecified' or 'protocol errors' using cause values #26, #31, #40 or #95-111.
3		SS		The SS stops timer T3385

Specific message contents

Case 1

Step 6: REQUEST PDP CONTEXT ACTIVATION REJECT message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION message in step 5.

Step 7: TI IE value is equal to the TI value of one of the active PDP contexts, Offered PDP address IE value and/or Access point name IE value are (is) different from the corresponding IE value(s) in the existing PDP context.

~~Case 2~~

~~Step 2, REQUEST PDP CONTEXT ACTIVATION REJECT message contains the same TI as included in the REQUEST PDP CONTEXT ACTIVATION message in step 1.~~

11.1.2.5 Test requirements

The UE that is configured to support one or more PDP contexts simultaneously shall:

- accept PDP context activation initiated by the SS if number of active contexts is lower than the maximum.
- locally deactivate the old PDP context when a REQUEST PDP CONTEXT ACTIVATION message is received, specifying a transaction identifier relating to an active PDP context and continue with the activation procedure of a new PDP context as indicated in the received message.

The UE that does not support PDP Context Activation (a number of active contexts supported by the UE is equal to maximum or UE does not support PDP context) shall reject PDP context activation initiated by the SS.