

Source: T1
Title: CR's to TS 34.123-1 v4.2.0 related to package 1 test cases
Agenda item: 5.1.3
Document for: Approval

This document contains 46 CRs to TS 34.123-1 v4.2.0 related to package 1 test cases. These CRs have been agreed by T1 and are put forward to TSG T for approval.

NOTE: TS 34.123-1 R99 and TS 34.123-1 Rel-4 were merged at T#13. This means that test cases for both releases are included in TS 34.123-1 Rel-4 and therefore this is the only release being maintained.

CR related to corrections to idle mode test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	195		Rel-4	Clause 6; Updates to test cases for idle mode operations	F	4.2.0	4.3.0	T1-020320	TEI	R99, Rel-4

CR related to corrections to MAC test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	181		Rel-4	Correction to MAC conformance test 7.1.2.4a	F	4.2.0	4.3.0	T1-020306	TEI	R99, Rel-4
34.123-1	182		Rel-4	Correction to MAC conformance test 7.1.2.5	F	4.2.0	4.3.0	T1-020307	TEI	R99, Rel-4
34.123-1	183		Rel-4	Correction to MAC conformance test 7.1.2.1.1	F	4.2.0	4.3.0	T1-020308	TEI	R99, Rel-4
34.123-1	184		Rel-4	Correction to MAC conformance test 7.1.1.1	F	4.2.0	4.3.0	T1-020309	TEI	R99, Rel-4
34.123-1	185		Rel-4	General clarification of MAC testing conditions	F	4.2.0	4.3.0	T1-020310	TEI	R99, Rel-4
34.123-1	186		Rel-4	Correction to MAC conformance test 7.1.1.8	F	4.2.0	4.3.0	T1-020311	TEI	R99, Rel-4
34.123-1	187		Rel-4	Correction to MAC conformance test 7.1.1.5	F	4.2.0	4.3.0	T1-020312	TEI	R99, Rel-4
34.123-1	188		Rel-4	Correction to MAC conformance test 7.1.1.4	F	4.2.0	4.3.0	T1-020313	TEI	R99, Rel-4
34.123-1	189		Rel-4	Correction to MAC conformance test 7.1.1.3	F	4.2.0	4.3.0	T1-020314	TEI	R99, Rel-4
34.123-1	190		Rel-4	Correction to MAC conformance test 7.1.1.2	F	4.2.0	4.3.0	T1-020315	TEI	R99, Rel-4
34.123-1	251		Rel-4	Correction to MAC conformance test 7.1.1.2	F	4.2.0	4.3.0	T1-020410	TEI	R99, Rel-4
34.123-1	252		Rel-4	Correction to MAC conformance test 7.1.1.8	F	4.2.0	4.3.0	T1-020411	TEI	R99, Rel-4
34.123-1	254		Rel-4	Correction to MAC conformance test 7.1.2.3.1	F	4.2.0	4.3.0	T1-020413	TEI	R99, Rel-4

CR related to corrections to RLC test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	191		Rel-4	Correction to test 7.2.3.12	F	4.2.0	4.3.0	T1-020316	TEI	R99, Rel-4
34.123-1	192		Rel-4	Correction to test 7.2.3.18	F	4.2.0	4.3.0	T1-020317	TEI	R99, Rel-4
34.123-1	193		Rel-4	Correction to test 7.2.3.4	D	4.2.0	4.3.0	T1-020318	TEI	R99, Rel-4
34.123-1	225		Rel-4	Correction to RLC conformance test 7.2.2.3	F	4.2.0	4.3.0	T1-020350	TEI	R99, Rel-4
34.123-1	226		Rel-4	Correction to RLC conformance test 7.2.2.6	F	4.2.0	4.3.0	T1-020351	TEI	R99, Rel-4

34.123-1	227		Rel-4	Correction to RLC conformance test 7.2.2.7	F	4.2.0	4.3.0	T1-020352	TEI	R99, Rel-4
34.123-1	228		Rel-4	Correction to RLC conformance test 7.2.3.5	F	4.2.0	4.3.0	T1-020353	TEI	R99, Rel-4
34.123-1	229		Rel-4	Correction to RLC conformance test 7.2.3.13	F	4.2.0	4.3.0	T1-020354	TEI	R99, Rel-4
34.123-1	230		Rel-4	Correction to RLC conformance test 7.2.3.6	F	4.2.0	4.3.0	T1-020355	TEI	R99, Rel-4
34.123-1	231		Rel-4	Correction to RLC conformance test 7.2.3.12	F	4.2.0	4.3.0	T1-020356	TEI	R99, Rel-4
34.123-1	232		Rel-4	Correction to RLC conformance test 7.2.3.14	F	4.2.0	4.3.0	T1-020357	TEI	R99, Rel-4
34.123-1	233		Rel-4	Correction to RLC conformance test 7.2.3.16	F	4.2.0	4.3.0	T1-020358	TEI	R99, Rel-4
34.123-1	234		Rel-4	Correction to RLC conformance test 7.2.3.17	F	4.2.0	4.3.0	T1-020359	TEI	R99, Rel-4
34.123-1	235		Rel-4	Correction to RLC conformance test 7.2.3.19	F	4.2.0	4.3.0	T1-020360	TEI	R99, Rel-4
34.123-1	236		Rel-4	Correction to RLC conformance test 7.2.3.20	F	4.2.0	4.3.0	T1-020361	TEI	R99, Rel-4
34.123-1	237		Rel-4	Correction to RLC conformance test 7.2.3.23	F	4.2.0	4.3.0	T1-020362	TEI	R99, Rel-4
34.123-1	238		Rel-4	Correction to RLC conformance test 7.2.3.24	F	4.2.0	4.3.0	T1-020363	TEI	R99, Rel-4
34.123-1	239		Rel-4	Conformance test 7.2.3.15	F	4.2.0	4.3.0	T1-020364	TEI	R99, Rel-4
34.123-1	240		Rel-4	Clause 7.2.3.18 RLC test case	F	4.2.0	4.3.0	T1-020365	TEI	R99, Rel-4
34.123-1	244		Rel-4	Correction to RLC conformance test 7.2.3.33	F	4.2.0	4.3.0	T1-020369	TEI	R99, Rel-4
34.123-1	253		Rel-4	Correction to RLC conformance test 7.2.3.34	F	4.2.0	4.3.0	T1-020412	TEI	R99, Rel-4

CR related to corrections to RRC test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	196		Rel-4	Correction to clause 8.2 for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020321	TEI	R99, Rel-4
34.123-1	216		Rel-4	Section 8.3.1 Connection Mobility Procedure TDD	F	4.2.0	4.3.0	T1-020341	TEI, LCRTDD	R99, Rel-4
34.123-1	218		Rel-4	Correction to clause 8.4 for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020343	TEI	R99, Rel-4
34.123-1	219		Rel-4	Correction to clause 8.3 for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020344	TEI	R99, Rel-4
34.123-1	220		Rel-4	Correction to clause 8.1 for package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020345	TEI	R99, Rel-4

CR related to corrections to MM, GMM and SM test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Workitem	Releases affected
34.123-1	198		Rel-4	Correction to test cases 9.2.3 and 9.2.4	F	4.2.0	4.3.0	T1-020323	TEI	R99, Rel-4
34.123-1	221		Rel-4	Corrections to GMM test cases	F	4.2.0	4.3.0	T1-020346	TEI	R99, Rel-4
34.123-1	222		Rel-4	Corrections to SM test cases	F	4.2.0	4.3.0	T1-020347	TEI	R99, Rel-4

CR related to corrections to Radio Bearer test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Workitem	Releases affected
34.123-1	201		Rel-4	Correction of layer 2 setting for TM RBs , segmentation indication	F	4.2.0	4.3.0	T1-020326	TEI	R99, Rel-4
34.123-1	202		Rel-4	Clause 14: Update of radio bearer test cases 14.2.39.x and 14.2.40 (introducing new RB test method)	F	4.2.0	4.3.0	T1-020327	TEI	R99, Rel-4
34.123-1	203		Rel-4	Clause 14; Update of stand-alone signalling radio bearer test cases	F	4.2.0	4.3.0	T1-020328	TEI	R99, Rel-4

CHANGE REQUEST

⌘ **34.123-1 CR 181** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.2.4a		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-17
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-4 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)

Reason for change:	⌘ Correction of several errors in the test procedure: <ol style="list-style-type: none">1. The UE needs to be informed about a change of system information by a SYSTEM NFORMATION CHANGE INDICATION message.2. Some parameters were chosen such that verification of correct ASC is not possible.3. Relationship between "RAB" and MAC logical channel priority is unclear
Summary of change:	⌘ <ol style="list-style-type: none">1. Transmission of SYSTEM NFORMATION INDICATION CHANGE message introduced into the test procedure.2. The parameter "Assigned subchannel number" for ASC#0 has been changed for test procedure step e) to introduce different conditions compared to step a). The parameter "Available subchannel number" has been changed to allow a periodic preamble ramping pattern, which can be verified in a straightforward way. Also, in the test procedure step e) the "Assigned subchannel number" for ASC#2 and ASC#3 has been changed in order to enable detection of the case that one these not permitted ASCs would be used. Tables indicating the permitted access slots depending on ASC and SFN have been added for test procedure d) and j).3. RAB renamed to RB.4. Changes introduced in rev 2 due to comments ETSI MCC/Motorola: - Initial UE state changed to BGP 6-11 (PS-DCCH+DTCH_FACH). The start of the test is triggered by transmission of an RLC PDU instead of PAGING RESPONSE message - PRACH selection from SIB 6 in the entire test procedure since the UE is in RRC

connected mode

- "Assigned subchannel number" in Step e) changed: setting of ASC#0 exchanged with ASC#3, since ASC#3 will be selected by the UE in this step.

Consequences if not approved: ⌘ Working UEs will fail this test.

Clauses affected: ⌘ 7.1.2.4a

Other specs affected: ⌘ Other core specifications ⌘ Test specifications
 O&M Specifications

Other comments: ⌘ Effects R99 and REL-4

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.

7.1.2.4a Access Service class selection for RACH transmission

7.1.2.4a.1 Definition and applicability

All UE.

7.1.2.4a.2 Conformance requirement

The following ASC selection scheme shall be applied, where NumASC is the highest available ASC number and MinMLP the highest logical channel priority assigned to one logical channel:

- In case all TBs in the TB set have the same MLP, select $ASC = \min(\text{NumASC}, \text{MLP})$.
- In case TBs in a TB set have different priority, determine the highest priority level MinMLP and select $ASC = \min(\text{NumASC}, \text{MinMLP})$.

Reference(s)

TS 25.321 clause 11.2.1.

7.1.2.4a.3 Test purpose

To verify that MAC selects ASC correctly.

7.1.2.4a.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 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 **BLOCK types 5 and 6**) as follows:

1. The SCCPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 (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.

The SS follows the procedure in TS 34.108 clause **7.4.2.1 (Mobile Terminated)-7.4.2.6 (initiated by Mobile Terminated connection)** so that the UE shall be in state BGP **6-2 (CS_CELL_FACH_INITIAL) 6-11 (PS-DCCH+DTCH_FACH)** with the following exception:

1. The MAC Logical channel Priority (MLP) of the user RAB is set to 8.

The user RAB is placed into loop-back mode 1 each with the UL SDU size set to 39 bytes

Related ICS/IXIT Statement(s)

TBD

Foreseen Final State of the UE

Test procedure

a) The SS sends 1 RLC SDU of size 10 bytes on the downlink user RB.
receives the PAGING RESPONSE message from the UE and checks- The SS waits to receive uplink data on RACH TrCH via the user RB, then checks that the access slots and preamble signatures used correspond to a valid ASC as transmitted in system information.

b) The SS reconfigures the transmitted system information as follows:

Only one ASC setting (ASC#0) is defined, (with default parameters), except that the parameter “Assigned sub channel number” is set as follows:-

ASC#0 Assigned sub channel number = ‘0010’B

The available sub-channel number defined in system information is set to ‘0000 0000 0001’B-‘1111 1111 1111’B (default parameter setting). Note: this value allows RACH transmission on any sub-channel ~~0~~ only defined by “Assigned sub channel number” above.

The SS then updates System Information Block 6, sends a SYSTEM INFORMATION CHANGE INDICATION message to the UE and waits enough time 10 s for the UE to take the system information change into account.

c) The SS sends 1 RLC SDU of size 10 bytes on the downlink user RAB.

d) The SS waits to receive uplink data on RACH TrCH via the user RAB, then checks that the access slots and preamble signatures used correspond to ASC#0, i.e. the access slot selected for the first access preamble can be any of the shaded table entries given below for ASC#0, depending on SFN (Note: the table entries which are not shaded are not allowed for ASC#0):

SFN modulo 8 of corresponding P-CCPCH frame	Sub-channel number											
	0	1	2	3	4	5	6	7	8	9	10	11
0	0	1	2	3	4	5	6	7				
1	12	13	14						8	9	10	11
2				0	1	2	3	4	5	6	7	
3	9	10	11	12	13	14						8
4	6	7					0	1	2	3	4	5
5			8	9	10	11	12	13	14			
6	3	4	5	6	7					0	1	2
7						8	9	10	11	12	13	14

e) The SS reconfigures the transmitted system information as follows:

Four ASC settings (ASC#0 to ASC#3) are defined (with default parameters), except that the parameter assigned sub channel number is set as follows:

ASC#0 Assigned sub channel number = ‘0100’B

ASC#1 Assigned sub channel number = ‘0001’B

ASC#2 Assigned sub channel number = ‘0000’B-‘0010’B

ASC#3 Assigned sub channel number = ‘0010’B-‘0000’B (i.e. no sub channel is assigned)

The available sub-channel number defined in system information is set to ‘0000 0000 0001’B-‘1111 1111 1111’B (default parameter setting). Note: this value allows RACH transmission on all sub-channels ~~0~~ only (ASC#1) defined by “Assigned sub channel number” above.

The SS then updates System Information Block 6, sends a SYSTEM INFORMATION CHANGE INDICATION message to the UE and waits enough time 10 s for the UE to take the system information change into account.

f) The SS sends 1 RLC SDU of size 10 bytes on the downlink user RAB.

g) The SS waits 210s to ensure no uplink data is received on RACH TrCH via the user RAB.

- h) The SS then reconfigures the uplink user RAB to have a MAC Logical channel Priority of 1.
- i) The SS sends 1 RLC SDU of size 10 bytes on the downlink user RAB.
- j) The SS waits to receive uplink data on RACH TrCH via the user RAB, then checks that the access slots and preamble signatures used correspond to ASC#1, i.e. the access slot selected for the first access preamble can be any of the shaded table entries given below for ASC#1, depending on SFN (Note: the table entries which are not shaded are not allowed for ASC#1):

SFN modulo 8 of corresponding P-CCPCH frame	Sub-channel number											
	0	1	2	3	4	5	6	7	8	9	10	11
0	0	1	2	3	4	5	6	7				
1	12	13	14						8	9	10	11
2				0	1	2	3	4	5	6	7	
3	9	10	11	12	13	14						8
4	6	7					0	1	2	3	4	5
5			8	9	10	11	12	13	14			
6	3	4	5	6	7					0	1	2
7						8	9	10	11	12	13	14

- k) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		→	PAGING RESPONSE	SS checks ASC parameters
1	←		RLC PDU	
1a		→	RLC PDU	SS checks ASC parameters
2		←	SYSTEM INFORMATION CHANGE INDICATION	Modified system information
3		←	RLC PDU	
4		→	RLC PDU	SS checks ASC parameters (ASC#0)
5		←	SYSTEM INFORMATION CHANGE INDICATION	Modified system information
6		←	RLC PDU	
6a				SS waits to check no RLC PDUs are received
7		↔	RB RECONFIGURATION	User RAB MLP = 1
8		←	RLC PDU	
9		→	RLC PDU	SS checks ASC parameters (ASC#1)
10		↔	RB RELEASE	Optional

7.1.2.4a.5 Test requirements

In step 1, the access slots and preamble signatures used on the PRACH TrCH on which the PAGING RESPONSE message-RLC PDU was received shall correspond to configured legal values for the allowed ASCs on the PRACH.

In step 4, the access slots and preamble signatures used on the PRACH TrCH on which the RLC PDU was received shall correspond to configured legal values for the allowed ASC#0.

In step 6a, no PDUs shall be received on PRACH.

In step 9, the access slots and preamble signatures used on the PRACH TrCH on which the RLC PDU was received shall correspond to configured legal values for the allowed ASC#1.

CR-Form-v4								
CHANGE REQUEST								
⌘	34.123-1 CR 182	⌘	ev	-	⌘	Current version:	4.2.0	⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Correction to MAC conformance test 7.1.2.5			
Source:	⌘	Ericsson			
Work item code:	⌘	TEI	Date:	⌘	2002-04-05
Category:	⌘	F	Release:	⌘	Rel-4
		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)

Reason for change:	⌘	The test purpose is covered by RRM test case 8.4.2.3 in 34.121
Summary of change:	⌘	Marked test case as being implicitly tested by test case 8.4.2.3 in 34.121.
Consequences if not approved:	⌘	Redundant test cases

Clauses affected:	⌘	7.1.2.5		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
Other comments:	⌘	Effects R99 and Rel-4		

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7.1.2.5 Void~~Control of RACH transmissions for FDD mode~~

NOTE Test case “Control of RACH transmissions for FDD mode” has been removed as the test purpose is implicitly tested by radio resource management test case in TS 34.121 clause 8.4.2.3.

~~7.1.2.5.1 Definition and applicability~~

~~All UE.~~

~~7.1.2.5.2 Conformance requirement~~

~~MAC receives the following RACH transmission control parameters from RRC with the CMAC-Config-REQ primitive: maximum number of preamble ramping cycles M_{max} .~~

~~When preamble transmission counter M larger than M_{max} , then the procedure will stop and enter Error handling procedure.~~

~~Reference(s)~~

~~TS 25.321 11.2.2, TS 25.321 figure 11.2.2.1.~~

~~7.1.2.5.3 Test purpose~~

~~To verify that the MAC entity controls RACH transmission correctly.~~

~~7.1.2.5.4 Method of test~~

~~Initial conditions~~

~~System Simulator:~~

~~1 cell, default parameters, Ciphering Off.~~

~~SS broadcast System Information 5 with M_{max} in RACH transmission parameters set as 0.~~

~~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 SCGPCH (signalled in SYSTEM INFORMATION 5) as follows:~~

- ~~1. The SCGPCH is configured as specified in TS 34.108 clause 6.10.2.4.3.3 (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.~~

~~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.~~

~~Related ICS/EXIT Statement(s)~~

~~TBD~~

~~Foreseen Final State of the UE~~

~~The same as the initial conditions.~~

~~Test procedure~~

~~a) Transmission of the default system information messages specified in TS 34.108, clause 6.1 is modified such that:~~

~~The dynamic persistence level (N) defined in SIB7 is set to 1, and the persistence scaling factors (s_x) defined in SIB5 are not broadcast. Note: these values should result in an attempted RACH transmission at every persistence check~~

~~The RACH transmission parameter M_{max} defined in SIB5 is set to 1.~~

~~The counter N300 broadcast in SIB1 is set to 1.~~

~~The parameter 'Preamble Retrans Max' in SIB5 is set to 1.~~

~~b) The SS pages the UE for a RRC CONNECTION REQUEST.~~

~~e) The SS waits for a RACH preamble transmission on AICH, and does not respond to the RACH preamble transmission on AICH. This step shall be repeated M_{max} times.~~

~~d) The SS checks for 100ms that no further RACH preamble transmissions are received.~~

~~The above procedure is repeated with M_{max} set to 5.~~

~~Expected sequence:~~

Step	Direction		Message	Comments
	UE	SS		
1	←		System information	Modified SIB5, SIB7
2	←		PAGING	
3	→		RACH preamble	Repeated M_{max} times.

~~7.1.2.5.5 Test requirements~~

~~The SS shall receive 1 RACH preamble from the UE when $M_{max}=1$.~~

~~The SS shall receive 5 RACH preambles from the UE when $M_{max}=5$.~~

CHANGE REQUEST

⌘ **34.123-1 CR 183** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.2.1		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-17
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-4 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)

Reason for change:	⌘ The test purpose is covered by RRM test cases 8.4.2.1 and 8.4.2.2 in TS 34.121
Summary of change:	⌘ Marked test case as being implicitly tested by test case 8.4.2.1 and 8.4.2.2 in 34.121.
Consequences if not approved:	⌘ Redundant test cases

Clauses affected:	⌘ 7.1.2.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Effects R99 and REL-4

How to create CRs using this form:

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

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- 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 RACH/FACH procedures

7.1.2.1 ~~Void~~Selection and control of Power Level

NOTE Test case “Selection and control of Power Level” has been removed as the test purpose is implicitly tested by radio resource management test cases in TS 34.121 clause 8.4.2.1 and 8.4.2.2.

7.1.2.1.1 Selection and control of Power Level (FDD)

7.1.2.1.1.1 Definition

~~Selection and control of power level for PRACH is controlled by the physical random access procedure which is initiated upon request of a PHY-Data-REQ primitive from the MAC sublayer.~~

~~The UE selection of "PRACH system information" is described in TS 25.331 clause 8.5.17~~

7.1.2.1.1.2 Conformance requirement

~~A. For FDD and prior to PRACH or PCPCH transmission the UE shall:~~

~~1> read the IEs "Primary CPICH Tx power" and "Constant value" in System Information Block type 6 (or System Information Block type 5, if system information block type 6 is not being broadcast) and the IE "UL interference" in System Information Block type 7;~~

~~1> measure the value for the CPICH_RSCP;~~

~~1> calculate the power for the first preamble as:~~

~~$$\text{Preamble Initial Power} = \text{Primary CPICH TX power} - \text{CPICH_RSCP} + \text{UL interference} + \text{Constant Value}$$~~

~~Where,~~

~~Primary CPICH TX power shall have the value of IE "Primary CPICH Tx power";~~

~~UL interference shall have the value of IE "UL interference"; and~~

~~Constant Value shall have the value of IE "Constant value".~~

~~1> as long as the physical layer is configured for PRACH or PCPCH transmission:~~

~~2> continuously recalculate the Preamble Initial Power when any of the broadcast parameters used in the above formula changes; and~~

~~2> resubmit to the physical layer the new calculated Preamble Initial Power.~~

~~For FDD and prior to PRACH or PCPCH transmission the UE shall:~~

~~read the IEs "Primary CPICH DL TX power", "UL interference" and "Constant value" in System Information Block type 6 (or System Information Block type 5, if system information block type 6 is not being broadcast) and System Information Block type 7;~~

~~measure the value for the CPICH_RSCP;~~

_____ calculate the power for the first preamble as:

$$\text{Preamble_Initial_Power} = \text{Primary CPICH DL TX power} - \text{CPICH_RSCP} + \text{UL interference} + \text{Constant Value}$$

Where,

_____ Primary CPICH DL TX power shall have the value of IE "Primary CPICH DL TX power";

_____ UL interference shall have the value of IE "UL interference"; and

_____ Constant Value shall have the value of IE "Constant Value".

_____ as long as the physical layer is configured for PRACH or PCPCH transmission:

_____ continuously recalculate the Preamble_Initial_Power when any of the broadcast parameters used in the above formula changes; and

_____ resubmit to the physical layer the new calculated Preamble_Initial_Power.

B. _____ The physical random access procedure shall be performed as follows:

.....

3. _____ Set the Preamble Retransmission Counter to Preamble Retrans Max.

4. _____ Set the parameter Commanded Preamble Power to Preamble_Initial_Power.

5. _____ In the case that the Commanded Preamble Power exceeds the maximum allowed value, set the preamble transmission power to the maximum allowed power. In the case that the Commanded Preamble Power is below the minimum level required in 3GPP TS 25.101, set the preamble transmission power to a value, which shall be at or above the Commanded Preamble Power and at or below the required minimum power specified in 3GPP TS 25.101. Otherwise set the preamble transmission power to the Commanded Preamble Power. Transmit a preamble using the selected uplink access slot, signature, and preamble transmission power.

6. _____ If no positive or negative acquisition indicator ($AI \neq +1$ nor -1) corresponding to the selected signature is detected in the downlink access slot corresponding to the selected uplink access slot:

6.1. _____ Select the next available access slot in the set of available RACH sub-channels within the given ASC.

6.2. _____ Randomly select a new signature from the set of available signatures within the given ASC. The random function shall be such that each of the allowed selections is chosen with equal probability.

- 6.3 ————— Increase the Commanded Preamble Power by $\Delta P_0 = \text{Power Ramp Step [dB]}$. If the Commanded Preamble Power exceeds the maximum allowed power by 6dB, the UE may pass L1 status ("No ack on AICH") to the higher layers (MAC) and exit the physical random access procedure.
- 6.4 ————— Decrease the Preamble Retransmission Counter by one.
- 6.5 ————— If the Preamble Retransmission Counter > 0 then repeat from step 5. Otherwise pass L1 status ("No ack on AICH") to the higher layers (MAC) and exit the physical random access procedure.
- 7 ————— If a negative acquisition indicator corresponding to the selected signature is detected in the downlink access slot corresponding to the selected uplink access slot, pass L1 status ("Nack on AICH received") to the higher layers (MAC) and exit the physical random access procedure.

Reference(s)

TS 25.331 clause 8.5.7.

TS 25.214 clause 6.1.

7.1.2.1.1.3 ————— Test purpose

To verify that:

- A. ————— the UE selects the correct initial preamble transmit power at start of a power ramp cycle, taking account of the "Primary CPICH DL TX power", "UL interference" and "Constant value" parameter values as received in SIB5 and the IE "UL interference" in System Information Block type 7 as well as the measured CPICH_RSCP;
- B1 ————— the UE, when not receiving any reply from UTRAN:
- performs a power ramp cycle taking into account the Power Ramp Step and Preamble Retrans Max parameter values as received in SIB 5;
 - does not transmit on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.
- B2 ————— the UE, when detecting a negative acquisition indicator:
- does not transmit on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

7.1.2.1.1.4 ————— Method of test

Initial conditions

~~The UE is attached to the network and in idle mode.~~

~~Preamble Retrans Max parameter in SIB5 set to 5.~~

~~Maximum number of preamble retransmission cycles in SIB 5 is set to $M_{max} = 1$.~~

~~Related ICS/IXIT Statement(s)~~

~~TBD~~

~~Foreseen Final State of the UE~~

~~The same as the initial conditions.~~

~~Test procedure~~

- ~~a) The SS pages the UE until it performs a RACH access.~~
- ~~b) The SS measures the power level of the RACH access.~~
- ~~c) The SS does not acknowledge the RACH access, causing the UE to retry.~~
- ~~d) The SS again measures the power level of the RACH access.~~
- ~~e) The SS repeats the procedure from step c) until the maximum number of retries N_{RA} "Preamble Retrans Max" have been attempted, and monitors the RACH channel for [TBD] 10 seconds to ensure that no further RACH accesses occur.~~
- ~~f) The SS pages the UE until it performs a RACH access.~~
- ~~g) The SS measures the power level of the RACH access.~~
- ~~h) The SS responds with a negative acquisition indicator on the AICH.~~
- ~~i) The SS monitors the RACH channel for [TBD] 10 seconds to ensure that no further RACH accesses occur.~~

~~Expected sequence~~

Ste	Direction		Message	Comments
	UE	SS		
1	←		PAGE	Preamble Retransmission Counter = 5
2	→		RRC_CONNECTION_REQUEST-Access Preamble	Power should be set to Preamble_Initial_Power Preamble Retransmission Counter = 4

3	→	RRC_CONNECTION_REQUEST Access Preamble	Power should be set to Preamble_Initial_Power $r + \Delta P_0$ Preamble Retransmission Counter = 3
4	→	RRC_CONNECTION_REQUEST Access Preamble	Power should be set to Preamble_Initial_Power $r + 2\Delta P_0$ Preamble Retransmission Counter = 2
5	→	RRC_CONNECTION_REQUEST Access Preamble	Power should be set to Preamble_Initial_Power $r + 3\Delta P_0$ Preamble Retransmission Counter = 1
6	→	RRC_CONNECTION_REQUEST Access Preamble	Power should be set to Preamble_Initial_Power $r + 4\Delta P_0$ Preamble Retransmission Counter = 0
7		Wait for T = [TBD]10_s	SS monitors for RACH access attempts
8	←	PAGE	
9	→	RRC_CONNECTION_REQUEST Access Preamble	Power should be set to Preamble_Initial_Power f
10	←	AICH = NEG ACQUISITION IND	
11		Wait for T = [TBD]10_s	SS monitors for RACH access attempts

Specific Message Contents

PRACH power offset info in System Information Block type 5

Information Element	Value/Remark
PRACH power offset	
-Power Ramp Step	[TBD: 1..83] dB

Preamble Retrans Max	5
---------------------------------	---

7.1.2.1.1.5 ~~Test requirements~~

A. ~~At step 2 and 9 the measured power level shall be:~~

~~$P_{RACH} = \text{Primary CPICH DL TX power} - \text{CPICH_RSCP} + \text{UL interference} + \text{Constant Value} \pm [\text{TBD}] \text{ 9 dB}$~~

Where “Primary CPICH DL TX power”, “UL interference” and “Constant Value” are set by the SS via SIB5, ~~and the “UL interference” set by the SS via SIB7~~ and CPICH_RSCP is the target value of the UE measured received power on one code measured on of the Primary CPICH which is reported back to the SS in measurement reports.

B1 ~~_____~~

~~_____ After step 6 At step 7 the UE does not perform any RACH access attempts; and~~

~~_____ At step 2, 3, 4, 5 and 6 the measured power level shall be~~

~~$P_{RACH} = \text{Preamble_Initial_Power} + k * \Delta P_0$~~

~~within the tolerances defined in clause 6.5.2.1 and Table 6.7 of TS 25.101.~~

Where

~~_____ Preamble_Initial_Power is the SS measured P_{RACH} in step 1;~~

~~_____ ΔP_0 is the Power Ramp Step value set in SIB5; and~~

~~_____ $k=1$ for step 2, $k=2$ for step 3, $k=3$ for step 4, $k=4$ for step 5 and $k=5$ for measurement in step 6~~

B2 ~~_____ After step 10 the UE does not perform any RACH access attempts~~

CR-Form-v4	
CHANGE REQUEST	
⌘ 34.123-1 CR 184 ⌘ ev - ⌘ Current version: 4.2.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to MAC conformance test 7.1.1.1	
Source: ⌘ Ericsson	
Work item code: ⌘ TEI	Date: ⌘ 2002-04-05
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-4 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)

Reason for change: ⌘ Incorrect SRB specified in table specifying SS CCCH configuration.	
Summary of change: ⌘ Changed SRB#1 to SRB#0. In expected sequence table, step 11 the comment "Sent with incorrect TCTF = 'B'" should be "Sent with incorrect TCTF = 11'B" (two places).	
Consequences if not approved: ⌘ Confusing.	

Clauses affected: ⌘ 7.1.1.1	
Other specs affected: ⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	
Other comments: ⌘ Effects R99 and Rel-4	

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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

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 (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

Higher layer	RAB/signalling RB	SRB#40	
	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.	

And using the configuration in TS 34.108 clause 6.10.2.4.3.3 for the PCH.

The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4.

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 (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.

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 clause 9: Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_DCH). 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:

Field	Value
TCTF	00'B

NOTE: In the case of a 2-bit MAC header the segment shall be padded to the correct length.

- d) The SS waits for retransmission of the RRC CONNECTION REQUEST on the PRACH/CCCH due to expiry of timer T300.
- e) The SS repeats steps c) and d), with the TCTF field set as follows:

Iteration	TCTF Value
2	01000001'B
3	10000000'B
4	10000001'B
5	11'B

- f) The SS repeats steps c) and d), with the TCTF field set as to 01000000'B.

Expected sequence

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 = 00'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 00'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 00'B
4	→		RRC CONNECTION REQUEST	
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	
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	
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	
11	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 1))	Sent with incorrect TCTF = 11'B
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT 2))	Sent with incorrect TCTF = 11'B
			...	
	←		MAC PDU(TCTF, RLC UM PDU(SN, RRC CONNECTION SETUP SEGMENT n))	Sent with incorrect TCTF = 11'B
12	→		RRC CONNECTION REQUEST	
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 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 retransmit the RRC CONNECTION REQUEST after each expiry of T300 (the UE should send up to $N_{300}=7$ RRC CONNECTION REQUESTs before abandoning the procedure).

On the final iteration the UE should respond with an RRC CONNECTION SETUP COMPLETE message.

CHANGE REQUEST

⌘ **34.123-1 CR 185** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ General clarification of MAC testing conditions		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
Category:	⌘ F	Release:	⌘ REL-4
	<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)

Reason for change:	⌘ General clarification of MAC testing conditions		
Summary of change:	⌘ 1. Clarification about RLC TM mode employed for some MAC test cases in the SS. 2. Reference to clause 7.3.2.1 on AM RLC default parameter setting added.		
Consequences if not approved:	⌘ Confusion about the test conditions		

Clauses affected:	⌘ 7.1		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Effects R99 and REL-4		

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7 Layer 2

7.1 MAC

General

If not otherwise mentioned, the same procedures as used in RRC test specification (TS 34.123-1 clause 8) or in the generic setup procedures (TS 34.108 clause 7) applies to reach initial conditions for MAC testing.

If not explicitly described, the same message contents and settings are applied as described in the RRC test description default settings.

In some MAC test cases, which are explicitly mentioned, the RLC in the system simulator is operated in Transparent Mode (RLC TM) for the tested channel. Accordingly, no RLC header will be added by the RLC entity. Also, there is no header included by the MAC protocol in the system simulator. The UE, however, shall always be configured as specified in TS 34.108 for the respective test case.

Where RLC TM is used, the payload size in the system simulator is set to the value, that corresponds to the transport block size expected by the UE for the respective configuration. The bit positions which are interpreted as RLC and MAC headers by the UE, are included into the RLC payload by the system simulator.

For test cases where AM RLC is employed in either UE, SS, or both, the default parameter settings as defined in clause 7.2.3.1 are applicable if not mentioned otherwise.

CHANGE REQUEST

⌘ **34.123-1 CR 186** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.1.8		
Source:	⌘ Motorola and Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
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-4 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)

Reason for change:	⌘ 1. SN in the expected sequence is incorrect 2. Missing statement at end of expected sequence on second iteration 3. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated) 4. Ambiguous as to which PDU is 128 bit in test procedure b) 5. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response
Summary of change:	⌘ 1. SN in expected sequence corrected 2. Statement to include repeat of steps 2 to 5 added 3. The test procedure was corrected such that transmissions with the correct C/T field are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure. 4. Clarified segmentation into RLC PDUs in test procedure b) 5. Setting of Missing PDU indicator has been Removed, as it is not required now. 6. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence. 7. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
Consequences if not approved:	⌘ Test does not work properly

Clauses affected: ⌘ 7.1.1.8

Other specs affected:	⌘ <input type="checkbox"/>	Other core specifications	⌘	
	<input type="checkbox"/>	Test specifications		
	<input type="checkbox"/>	O&M Specifications		
Other comments:	⌘	Effects R99 and REL-4		

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.

7.1.1.8 DTCH or DCCH mapped to DCH / Invalid C/T Field

7.1.1.8.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the DCH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

7.1.1.8.2 Conformance requirement

DTCH or DCCH mapped to DCH, no multiplexing of dedicated channels on MAC: -no MAC header is required.

DTCH or DCCH mapped to DCH, with multiplexing of dedicated channels on MAC: -C/T field is included in MAC header.

The following fields are defined for the MAC header:

- C/T field
The C/T field provides identification of the logical channel instance when multiple logical channels are carried on the same transport channel...

Structure of the C/T field

C/T field	Designation
0000	Logical channel 1
0001	Logical channel 2
...	...
1110	Logical channel 15
1111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 b).

7.1.1.8.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in C/T field.
2. To verify that the C/T field is correctly applied when a DTCH or DCCH is mapped to a DCH.

7.1.1.8.4 Method of test

Initial conditions

System Simulator:

- 1 cell, default parameters, Ciphering Off.

The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2: Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH) with the following exception:

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	NAS_DT High prio	
RLC	Logical channel type	DCCH	
	RLC mode	TM	
	Payload sizes, bit	148	
	Max data rate, bps	3700	
	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	DCH	
	TB sizes, bit	148	
	TFS	TF0, bits	0 x 148
		TF1, bits	1 x 148
	TTI, ms	40	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	516	
	Uplink; Max number of bits/radio frame before rate matching	129	
	RM attribute	155-165	
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.			

The TFCS should be configured as specified in clause 6.10.2.4.1.2.1.1.2.

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 (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.

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-1 (CS-CELL_DCH_INITIAL). During this procedure the RRC CONNECTION SETUP message shall allocate a DCH to carry the signalling radio bearers as follows:

1. The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2: Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH) with the following exception:

~~1.1 The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling has Missing PDU Indicator enabled.~~

~~1.2 The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling, has Transmission window size set to 128, and has Receive window size set to 128.~~

Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the C/T field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing ~~an AUTHENTICATION REQUEST message.~~

The ~~DIRECT TRANSFER~~ message shall be segmented into ~~128~~144 bit PDUs, with including the correct RLC AM headers.

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this ~~D~~omain exists)
3. The polling bit in RLC header is set for ~~T~~ransmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
C/T	0100'B

- c) The SS monitors the DCH (DCCH/SRB#3) for 10 s to ensure that no transmissions occur.
- ~~e~~d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct C/T value for AM-DCCH NAS High Priority of 0010'B. The sequence numbers in the RLC headers shall be ~~incremented normally identical with~~ ~~from~~ those sent in b).
- ~~d~~e) SS Receives RLC Status PDU on SRB #3 a~~A~~cknowledging the ~~r~~Receipt of the above RLC PDU
- ~~f~~) The SS receives ~~an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the DCH due to detection of missing PDUs.~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2
- ~~e~~g) The SS repeats steps b), c), ~~d~~, ~~e~~ and ~~d~~f), with the C/T field set as follows in step b):

Iteration	C/T Value
2	1111'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check C/T field
2		←	MAC PDU(C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))(AUTHENTICATION REQUEST) SEGMENT 1))	Sent with incorrect C/T = 0100'B, or 1111'B
		←	MAC PDU(C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT 2))	Sent with incorrect C/T = 0100'B, or 1111'B
		←	...	
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT n))	Sent with incorrect C/T = 0100'B, or 1111'B
2a			wait for T = 10 s	SS monitors for DCH (SRB#3) transmissions
3		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER))(AUTHENTICATION REQUEST) SEGMENT 1))	Sent with correct C/T = 0010'B
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT 2))	Sent with correct C/T = 0010'B
		←	...	
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT n))	Sent with correct C/T = 0010'B
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n C/T Field is recognised as correct for the DCCH
5	→		AUTHENTICATION RESPONSE RRC Status PDU	C/T Field is recognised as correct for the DCCH

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration 2 the SN in steps 2 and 4 starts with x+1.

Specific Message Contents

None

7.1.1.8.5 Test Requirement

In step a) the C/T field should be set to the Logical Channel ID for SRB #3 (0010'B). Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request RLC status reports with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs. On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with C/T=0010'B is received in step e), negatively acknowledging the PDUs transmitted in step b) as missing. RLC status reports, and the UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3 with C/T field set to '0010'B and RRC Status PDU on SRB # 2. expected sequence the SS shall receive an AUTHENTICATION RESPONSE message

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020312

3GPP TSG-T1/SIG Meeting #21
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020168r1

CR-Form-v4
<h2 style="margin: 0;">CHANGE REQUEST</h2>
⌘ 34.123-1 CR 187 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.1.5		
Source:	⌘ Motorola and Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
Category:	⌘ F	Release:	⌘ Rel-4
	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)	

Reason for change:	⌘ <ol style="list-style-type: none"> 1. Clarification of RLC segmentation 2. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated). 3. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Correction of segmentation unit (including RLC header) 2. The test procedure was corrected such that transmissions with the correct UE-Id are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure. 3. Setting of Missing PDU indicator has been Removed, as it is not required now. 4. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence. 5. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
Consequences if not approved:	⌘ Test does not work properly

Clauses affected:	⌘ 7.1.1.5
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

affected:

- Test specifications
- O&M Specifications



Other comments: ⌘ Effects R99 and Rel-4

7.1.1.5 DTCH or DCCH mapped to RACH/FACH / Incorrect UE ID

7.1.1.5.1 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.

7.1.1.5.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- UE-Id
The UE-Id field provides an identifier of the UE on common transport channels...

Lengths of UE Id field

UE Id type	Length of UE Id field
U-RNTI	32 bits
C-RNTI	16 bits

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

7.1.1.5.3 Test purpose

1. To verify that the UE ignores PDUs with UE-Ids that do not match the Id allocated to it.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.5.4 Method of test

Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the UE-Id field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing ~~an AUTHENTICATION REQUEST message.~~

~~The DIRECT TRANSFER message shall be segmented into 144 bit RLC PDUs, including the 128 bit PDUs, with correct RLC AM headers.~~

1. Dummy Octet String for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.

2. The IE CN Domain Identity is ~~S~~set to PS Domain (no signalling connection for this ~~D~~domain exists)

3. The polling bit in RLC header is set for ~~T~~transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B
UE ID Type	C-RNTI
UE ID	Address allocated in RRC CONNECTION SETUP message + 1.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority): 0010'B

c) The SS monitors the RACH for 10 s to ensure that no RACH access occurs.

ed) The SS again transmits MAC PDUs as in b) above, but this time uses the correct UE-Id value of the address allocated in the RRC CONNECTION SETUP message. The sequence numbers in the RLC headers shall be ~~incremented normally identical with~~ from those sent in b).

ee) SS Receives RLC Status PDU on SRB #3 ~~A~~acknowledging the ~~R~~receipt of the above RLC PDU

f) The SS receives ~~an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the RACH due to detection of missing PDUs.~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check UE-Id
2	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with incorrect UE-Id = C-RNTI+1
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with incorrect UE-Id = C-RNTI+1
			...	
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with incorrect UE-Id = C-RNTI+1
2a			wait for T = 10 s	SS monitors for RACH access attempts
3	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with correct UE-Id = C-RNTI
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with correct UE-Id = C-RNTI
			...	
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with correct UE-Id = C-RNTI
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n UE-Id is recognised as correct for the UE
5	→		AUTHENTICATION RESPONSE RRC Status PDU	UE-Id is recognised as correct for the UE

Specific Message Contents

None

7.1.1.5.5 Test Requirement

In step a) the UE-Id field should be set to the C-RNTI allocated in the RRC CONNECTION SETUP message. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

~~In step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 when the first PDU with UE-Id = value of the address allocated in the RRC CONNECTION SETUP message, is received in step e); negatively acknowledging the PDUs transmitted in step b) as missing. During the test the SS shall request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.~~

At the end of the expected sequence (steps 4 and 5) the SS shall ~~receive~~ receive RLC Status PDU on SRB # 3 with correct C-RNTI ~~an AUTHENTICATION RESPONSE message~~ and RRC Status PDU on SRB # 2.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020313

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020167r1

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 188 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.1.4		
Source:	⌘ Motorola and Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ <ol style="list-style-type: none"> 1. Incorrect statement at end of expected sequence. The whole sequence is not repeated, only part of it. Also x does not start at the same value in iterations 1 and 2. 2. Ambiguous as to which PDU is 128 bit in test procedure b). 3. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated) 4. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Changed statement to include repeat of steps 2 to 5 only. Clarified start value of x for iterations 1 and 2. 2. Clarified segmentation into RLC PDUs in test procedure b). 3. The test procedure was corrected such that transmissions with the correct UE-Id type value are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure. 4. Setting of Missing PDU indicator has been Removed, as it is not required now. 5. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence. 6. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
Consequences if not approved:	⌘ Test does not work properly.

Clauses affected:	⌘	7.1.1.4
Other specs affected:	⌘	Other core specifications
		Test specifications
		O&M Specifications
Other comments:	⌘	Effects R99 and Rel-4

7.1.1.4 DTCH or DCCH mapped to RACH/FACH / Invalid UE ID Type Field

7.1.1.4.1 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.

7.1.1.4.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- UE-Id Type
The UE-Id Type field is needed to ensure correct decoding of the UE-Id field in MAC Headers.

Table 9.2.1.7: UE-Id Type field definition

UE-Id Type field 2 bits	UE-Id Type
00	U-RNTI
01	C-RNTI
10	Reserved (PDUs with this coding will be discarded by this version of the protocol)
11	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

7.1.1.4.3 Test purpose

1. To verify that the UE discards PDUs with reserved values in UE-Id type field.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.4.4 Method of test

Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the UE-Id Type field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing ~~an AUTHENTICATION REQUEST message~~.

~~The DIRECT TRANSFER message shall be segmented into 128/144-bit RLC PDUs, with including the correct RLC AM headers.~~

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this Ddomain exists)
3. The polling bit in RLC header is set for ~~T~~transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B
UE ID Type	10'B
UE ID	As set in RRC CONNECTION SETUP message.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority): 0010'B

- c) The SS monitors the RACH for 10 s to ensure that no RACH access occurs.

- ~~e~~d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct UE-Id type value for C-RNTI of 01'B. The sequence numbers in the RLC headers shall be ~~incremented normally~~ identical with from those sent in b).

- ~~d~~e) SS Receives RLC Status PDU on SRB #3 Aacknowledging the ~~R~~receipt of the above RLC PDU

- ~~f~~) The SS receives ~~an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the RACH due to detection of missing PDUs~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2

- ~~e~~g) The SS repeats steps b), c), ~~d~~, e) and ~~d~~f), with the UE-Id type field set as follows in step b):

Iteration	UE-Id type Value
2	11'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check UE-Id Type
2	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))(AUTHENTICATION REQUEST SEGMENT 1))	Sent with incorrect UE-Id Type = 10'B, or 11'B.
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT 2))	Sent with incorrect UE-Id Type = 10'B, or 11'B.
			...	
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT n))	Sent with incorrect UE-Id Type = 10'B, or 11'B.
2a			wait for T = 10 s	SS monitors for RACH access attempts
3	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER))(AUTHENTICATION REQUEST SEGMENT 1))	Sent with correct UE-Id Type = 01'B
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT 2))	Sent with correct UE-Id Type = 01'B
			...	
	←		MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT n))	Sent with correct UE-Id Type = 01'B
4	→		RLC-STATUS-PDU	NACK PDU _s with SN = x to x+n UE-Id is recognised as correct for the UE
5	→		AUTHENTICATION RESPONSE RRC Status PDU	RRC UE-Id is recognised as correct for the UE

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration k the SN in step 2 and 4 starts with $x + (k - 1)$.

Expected sequence is repeated for iteration 2.

Specific Message Contents

None

7.1.1.4.5 Test Requirement

In step a) the UE-Id Type field should be set to 01'B. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

~~On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with UE-Id Type=01'B is received in step e), negatively acknowledging the PDUs transmitted in step b) as missing. During the test the SS request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.~~

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive an AUTHENTICATION RESPONSE message. RLC Status PDU on SRB # 3, with UE Id type cCorrectly sSet to '01'B and RRC Status PDU on SRB # 2..

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 189 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to MAC conformance test 7.1.1.3	
Source: ⌘ Motorola and Ericsson	
Work item code: ⌘ TEI Date: ⌘ 2002-04-05	
Category: ⌘ F <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 .	Release: ⌘ Rel-4 <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)

Reason for change: ⌘	<ol style="list-style-type: none">1. Wrong SRB specified in test requirements.2. Incorrect statement at end of expected sequence. The whole sequence is not repeated, only part of it. Also x does not start at the same value in iterations 1 and 2.3. Ambiguous as to which PDU is 128 bit in test procedure b).4. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated)4. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response.
Summary of change: ⌘	<ol style="list-style-type: none">1. Changed SRB#4 to SRB#3 in test requirements.2. Changed statement to include repeat of steps 2 to 5 only. Clarified start value of x for iterations 1 and 2.3. Clarified segmentation into RLC PDUs in test procedure b).4. The test procedure was corrected such that transmissions with the correct C/T field are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure.4. Setting of Missing PDU indicator has been Removed, as it is not required now.5. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence.6. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
Consequences if ⌘	Test does not work properly.

not approved:

Clauses affected:

⌘ 7.1.1.3

Other specs affected:

⌘ Other core specifications
 Test specifications
 O&M Specifications

⌘

Other comments:

⌘ Effects R99 and Rel-4

7.1.1.3 DTCH or DCCH mapped to RACH/FACH / Invalid C/T Field

7.1.1.3.1 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.

7.1.1.3.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

The following fields are defined for the MAC header:

- C/T field
The C/T field provides identification of the logical channel instance when multiple logical channels are carried on the same transport channel...

Structure of the C/T field

C/T field	Designation
0000	Logical channel 1
0001	Logical channel 2
...	...
1110	Logical channel 15
1111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

7.1.1.3.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in C/T field.
2. To verify that the TCTF field, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.3.4 Method of test

Initial conditions

System Simulator:

See clause 7.1.1.2.4.

User Equipment:

See clause 7.1.1.2.4.

Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the C/T field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing ~~an AUTHENTICATION REQUEST message~~.

The ~~DIRECT TRANSFER~~ message shall be segmented into ~~128~~144 bit RLC PDUs, with including the correct RLC AM headers.

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this dDomain exists).
3. The polling bit in RLC header is set for Transmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
TCTF	11'B
UE ID Type	C-RNTI
UE ID	As set in RRC CONNECTION SETUP message.
C/T	0111'B

c) The SS monitors the RACH for 10 s to ensure that no RACH access occurs.

ed) The SS again transmits MAC PDUs as in b) above, but this time uses the correct C/T value for AM-DCCH NAS High Priority of 0010'B. The sequence numbers in the RLC headers shall be ~~incremented normally~~identical with ~~from~~ those sent in b).

de) SS rReceives RLC Status PDU on SRB #3 aAcknowledging the rReceipt of the above RLC PDU.

f) The SS receives an ~~AUTHENTICATION RESPONSE message~~ ~~STATUS PDU on SRB #3~~ ~~AM RLC on the RACH due to detection of missing PDUs~~. RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.

eg) The SS repeats steps b), c), d), e) and ~~d~~f), with the C/T field set as follows:

Iteration	C/T Value
2	1111'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check C/T field
2		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))(AUTHENTICATION REQUEST SEGMENT 1))	Sent with incorrect C/T = 0111'B, or 1111'B.
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT 2))	Sent with incorrect C/T = 0111'B, or 1111'B.
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT n))	Sent with incorrect C/T = 0111'B, or 1111'B.
2a			wait for T = 10 s	SS monitors for RACH access attempts
3		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER))(AUTHENTICATION REQUEST SEGMENT 1))	Sent with correct C/T = 0010'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+21, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT 2))	Sent with correct C/T = 0010'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST SEGMENT n))	Sent with correct C/T = 0010'B
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n C/T Field is recognised as correct for the DCCH
5	→		AUTHENTICATION RESPONSE RRC Status PDU	C/T Field is recognised as correct for the DCCH

Steps 2 to 5 of the expected sequence is repeated for iteration 2. Note: For iteration k the SN in steps 2 and 4 starts with $x + (k - 1)$.

Specific Message Contents

None

7.1.1.3.5 Test Requirement

In step a) the C/T field should be set to the Logical Channel ID for SRB #4-3 (0010'B). Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with C/T=0010'B is received in step c), negatively acknowledging the PDUs transmitted in step b) as missing. During the test the SS shall request RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3, with C/T field set to value '0010'B and RRC Status PDU on SRB # 2. expected sequence the SS shall receive an AUTHENTICATION RESPONSE message.

CHANGE REQUEST

⌘ 34.123-1 CR 190 ⌘ rev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.1.2		
Source:	⌘ Motorola and Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
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-4 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)

Reason for change:	⌘ 1. Clarification of RLC segmentation 2. Clarification of the expected sequence for repeated iterations 3. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated). 4. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response.
Summary of change:	⌘ 1. Correction of segmentation unit (including RLC header) 2. Correction of the note related to the expected sequence 3. The test procedure was corrected such that transmissions with the correct TCTF field are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure. 4. Setting of Missing PDU indicator has been Removed. 5. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence. 6. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
Consequences if not approved:	⌘ Test does not work properly

Clauses affected:	⌘ 7.1.1.2
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

affected:	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
Other comments:	⌘ Effects R99 and REL-4	

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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.

7.1.1.2 DTCH or DCCH mapped to RACH/FACH / Invalid TCTF

7.1.1.2.1 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.

7.1.1.2.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

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

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

7.1.1.2.3 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, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.2.4 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 (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	Test	
RLC	Logical channel type	DCCH	
	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.		

and using the configuration in TS 34.108 clause 6.10.2.4.3.3 for the PCH.

The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4.

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 (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.

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-2 (CS-CELL_FACH_INITIAL) with the following exception:

- ~~1. The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling has Missing PDU Indicator enabled.~~
- ~~2. The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling, has Transmission window size set to 128, and has Receive window size set to 128.~~

Test procedure

a) The SS receives the PAGING RESPONSE message from the UE and checks the TCTF field.

~~b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing~~

- ~~1. an AUTHENTICATION REQUEST message Dummy Octet String for NAS Message, of Ssize sufficient enough to Ffit in one RLC PDU of 144 bits, including the correct RLC AM header.~~

- 2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this ~~D~~domain exists)
- 3. The polling bit in RLC header is set for ~~T~~transmission of RLC STATUS PDU.

~~The DIRECT TRANSFER message shall be segmented into 128-144 bit PDUs, with including the correct RLC AM headers.~~

The MAC header shall be set as follows:

Field	Value
TCTF	00'B
UE ID Type	C-RNTI
UE ID	As set in RRC CONNECTION SETUP message.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority)

Where a TCTF size of 8-bits is used, 6-bits from the RLC payload shall be discarded.

c) The SS monitors the RACH for 10 s to ensure that no RACH access occurs.

~~e~~d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct TCTF of 11'B. The sequence numbers in the RLC headers shall be ~~incremented normally~~identical with ~~from~~ those sent in b).

~~d~~e) SS Receives RLC Status PDU on SRB #3 acknowledging the ~~r~~Receipt of the above RLC PDU

~~f~~f) ~~The SS receives an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the RACH due to detection of missing PDUs~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.

~~e~~g) The SS repeats steps b), c), ~~d~~e) and ~~d~~f), with the TCTF field set as follows in step b):

Iteration	TCTF Value
2	01000000'B
3	01000001'B
4	10000000'B
5	10000001'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check TCTF
2		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
2a			wait for T = 10 s	SS monitors for RACH access attempts
3		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with correct TCTF = 11'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with correct TCTF = 11'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with correct TCTF = 11'B
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n and TCTF Field is recognised as correct for the DCCH.
5	→		AUTHENTICATION RESPONSE RRC Status PDU	TCTF Field is recognised as correct for the DCCH

Steps 2 – 5 of above expected sequence ~~is~~ are repeated for iterations 2 to 5. Note: For iteration k the SN in steps 2 and 4 starts with x + (k-1).

Specific Message Contents

None

7.1.1.2.5 Test Requirement

In step a) the TCTF field should have the value 00'B. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

~~On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with TCTF=11'B is received in step e), negatively acknowledging the PDUs transmitted in step b) as missing. During the test the SS shall request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.~~

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive an ~~AUTHENTICATION RESPONSE message where the TCTF field should have value 01'B.~~ RRC Status PDU on SRB # 2, and RLC Status PDU on SRB # 3 with TCTF field set to value '01' B.

CR-Form-v5.1
CHANGE REQUEST
⌘ 34.123-1 CR 191 ⌘ rev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to test 7.2.3.15	
Source: ⌘ RAN2 – Nortel Networks, Rohde & Schwarz, Ericsson (EMP)	
Work item code: ⌘ TEI Date: ⌘ 13/05/2002	
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-4 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)

Reason for change: ⌘ In the current test it is not clear in which PDUs the poll bit shall be set by the UE
Summary of change: ⌘ It is clarified that the poll bit shall only be set in step 8 and not in any other step. The conformance requirement is updated and aligned with v3.10.0 of TS 25.322
Consequences if not approved: ⌘

Clauses affected: ⌘ 7.2.3.15
Other specs affected: ⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> O&M Specifications ⌘ <input type="checkbox"/>
Other comments: ⌘ Affects R99 and REL-4

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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.

7.2.3.15 Polling for status / Last PDU in transmission queue

7.2.3.15.1 Definition

This case tests that the UE will poll for a status request on the last PDU in its transmission queue when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.15.2 Conformance requirement

~~The Polling bit shall be set to 1 if any of following conditions are fulfilled except when the poll prohibit function is used and the timer Timer_Poll_Prohibit is active:~~

- ~~1. Last PDU in buffer is used and the last PDU available for transmission is transmitted.~~

Last PDU in buffer.

The Sender triggers the Polling function when the last AMD PDU to be transmitted for the first time and is allowed to transmit according to subclause 3GPP TS 25.322 clause 11.3.2.2 is submitted to lower layer.

...

- AMD PDUs are only allowed to transmit:

- if the AMD PDU has a "Sequence Number" < VT(MS); or

- if the AMD PDU has a "Sequence Number" equal to VT(S)-1; and

- if the AMD PDU is not restricted to be transmitted by the local suspend function, see 3GPP TS 25.322 subclause 9.7.5.

...

The Sender shall:

- if a poll has been triggered by one or several poll triggers (see 3GPP TS 25.322 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 clause 11.3.2.1.1, 9.7.1 and 11.3.2.

7.2.3.15.3 Test purpose

1. To verify that a poll is performed when only one PDU is available for transmission, and the poll prohibit timer ~~is~~ function is not used.
2. To verify that a poll is performed when only one PDU is available for transmission, and the poll prohibit timer ~~is~~ function is used, but inactive.

7.2.3.15.4 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	First run	Second run
Timer_poll_prohibit	disabled	200
Last transmission PDU poll	TRUE	TRUE
Last retransmission PDU poll	FALSE	FALSE

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 $(2 * AM_7_PayloadSize) - 1$ bytes.

Test procedure

- a) The SS transmits an RLC SDU of length $(4 * AM_7_PayloadSize) - 1$ bytes to the UE.
- b) The SS checks the uplink RLC PDUs for a poll for status flag.
- c) The SS may optionally release the radio bearer.

The test is repeated using the RLC parameters given in the Second run column of the configuration table for the initial conditions.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1
4		←	DOWNLINK RLC PDU	SDU 1
5		←	DOWNLINK RLC PDU	SDU 1 + Poll
6		→	STATUS PDU	
7		→	UPLINK RLC PDU	SDU 1
8		→	UPLINK RLC PDU	SDU 1 + Poll
9		←	STATUS PDU	
10			RB RELEASE	Optional step

7.2.3.15.5 Test requirements

The Poll bit shall be set in the AMD PDU header of the PDU returned in step 8. The poll bit shall not be set in the AMD PDU header of other PDUs.

CHANGE REQUEST

⌘ **34.123-1 CR 192** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to test 7.2.3.18		
Source:	⌘ RAN2 – Nortel Networks		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2002
Category:	⌘ F	Release:	⌘ REL-4
	<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)

Reason for change:	⌘ Same changes as those done in the Conformance requirement section of 7.2.3.17 (outdated conformance requirement) could be done here.		
Summary of change:	⌘ Changes to conformance requirement		
Consequences if not approved:	⌘		

Clauses affected:	⌘ 7.2.3.18		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Affects R99 and REL-4		

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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.

7.2.3.18 Polling for status / Poll every Poll_SDU SDUs

7.2.3.18.1 Definition

This case tests that the UE will poll for a status request every Poll_SDU SDUs when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.18.2 Conformance requirement

VT(SDU).

This state variable is used when the "poll every Poll_SDU SDU" polling trigger is configured. It shall be incremented by 1 for a given SDU when all the AMD PDUs carrying a part of this SDU have been transmitted at least once. When it becomes equal to the value Poll_SDU a new poll shall be transmitted and the state variable shall be set to zero. The "Polling bit" shall be set to "1" in the first transmission of the AMD PDU that contains the last segment of the SDU.

The initial value of this variable is 0.

Poll_SDU.

This protocol parameter indicates how often the transmitter shall poll the Receiver in the case where "polling every Poll_SDU SDU" is configured by upper layers. It represents the upper limit for state variable VT(SDU). When VT(SDU) equals the value Poll_SDU a poll shall be transmitted to the peer entity.

The Sender shall:

- if a poll has been triggered by one or several poll triggers (see TS 25.322 subclause 9.7.1):
 - if polling is not prohibited, see TS 25.322 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".

~~The state variable VT(SDU) is used when the poll every Poll_SDU SDU function is used. It is incremented with 1 for each SDU that is transmitted. When it reaches Poll_SDU a new poll is transmitted and the state variable is set to zero. The poll bit should be set in the PDU that contains the last segment of the SDU. The initial value of this variable is 0.~~

~~The Polling bit shall be set to 1 if ... Every Poll_SDU is used and VT(SDU)=Poll_SDU and the PDU contains the last segment that SDU~~

Reference

TS 25.322 clauses 9. 4, 9.6 and 11.3.2.1.1.

7.2.3.18.3 Test purpose

1. To verify that a poll is performed when VT(SDU) reaches Poll_SDU.
2. To verify that the poll is sent in the last PDU of the SDU.

7.2.3.18.4 Method of test

Initial conditions

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS34.108) 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 Last transmission PDU poll Poll_SDU	FALSE 1
--	------------

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 $(4 * AM_7_PayloadSize) - 1$ bytes.

Let the value of Poll_SDU be P.

- a) The SS sends $2 * P$ RLC SDUs of size $AM_7_PayloadSize - 1$ bytes to the UE in PDUs with sequence numbers that are contiguous, starting from zero.
- b) The SS checks the sequence numbers and polling bits of the RLC SDUs returned on the uplink.
- c) The SS terminates the connection.

The test is repeated with Poll_SDU set to 64.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	DOWNLINK RLC PDU	SDU 2
3		←	...	SS continues to transmit RLC SDUs
4		←	DOWNLINK RLC PDU	SDU 2P
5		→	UPLINK RLC PDU	SDU 1 Expanded to $(4 * AM_7_PayloadSize) - 1$ bytes by test function
6		→	UPLINK RLC PDU	
7		→	...	SS continues to receive RLC SDUs
8		→	UPLINK RLC PDU	SDU P, Poll
9		←	STATUS PDU	
10		→	UPLINK RLC PDU	SDU P+1 Expanded to $(4 * AM_7_PayloadSize) - 1$ bytes by test function
11		→	UPLINK RLC PDU	
12		→	...	SS continues to receive RLC SDUs
13		→	UPLINK RLC PDU	SDU 2P, Poll
14			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.18.5 Test requirements

The UE shall return uplink PDUs that contain polls for status in sequence numbers $4 * P - 1$ and $8 * P - 1$. No other PDUs should poll for status.

CHANGE REQUEST

⌘ **34.123-1 CR 193** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Editorial correction to test 7.2.3.4		
Source:	⌘ RAN2 -Nortel Networks		
Work item code:	⌘ TEI	Date:	⌘ 13/05/2002
Category:	⌘ D	Release:	⌘ REL-4
	<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)

Reason for change:	⌘ Editorial		
Summary of change:	⌘ PU changed to PDU		
Consequences if not approved:	⌘		

Clauses affected:	⌘ 7.2.3.4.1		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input 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.

7.2.3.4 Segmentation and Reassembly / 7-bit Length Indicators / LI = 0

7.2.3.4.1 Definition

The RLC segments and concatenates SDUs into payload units according to the payload unit size configured by RRC. A pre-defined length indicator value is used to indicate when an SDUs ends coincident with the end of the previous PDU. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.3.4.2 Conformance requirement

If the PDU is exactly filled with the last segment of a SDU and there is no room for an LI field, an LI field set to only 0's shall be included as the first length indicator in the following PDU.

Reference(s)

TS 25.322 clause 11.3.2.1.

7.2.3.4.3 Test purpose

1. To test that where an SDU exactly fills a PDU, an LI of value zero is placed by the transmitter as the first LI in the next PDU.
2. To test that where an SDU exactly fills a PDU, and an LI of value zero is the first LI in the next PDU, the receiver correctly reassembles the SDU.

7.2.3.4.4 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.

These settings apply to both the uplink and downlink DTCH.

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to AM_7_PayloadSize bytes.

Test procedure

- a) The SS transmits an RLC SDU of size 2 * AM_7_PayloadSize bytes. The SS polls the receiver for status in the last RLC PDU sent.
- b) The SS checks the length indicator sizes and values of the RLC PDUs returned on the uplink, and checks the length and content of the received RLC SDU.
- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1
4		←	DOWNLINK RLC PDU	LI=0, poll and padding
5		→	UPLINK RLC PDU	No Lis
6		→	UPLINK RLC PDU	(Poll) Check Lis and re-assembled SDU
6a		→	STATUS PDU	If piggy-backed status is not used in 6
7		←	STATUS PDU	
8			RB RELEASE	Optional step

7.2.3.4.5 Test requirements

The UE shall return two RLC PDUs. The first shall have no LIs. The second shall have an LI indicating that the SDU exactly filled the previous PU, and an LI indicating either that the remainder of the PDU contains padding, or that it contains a piggy-backed STATUS PDU.

The length of the received SDU should be AM_7_PayloadSize bytes, and the data content the same as the first AM_7_PayloadSize bytes of the transmitted SDU.

CHANGE REQUEST

⌘ **34.123-1 CR 195** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ CR to 34.123-1 clause 6; Updates to test cases for idle mode operations		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-19
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-4 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)

Reason for change: ⌘ General, section 6:

- When UE is camped on a cell, UTRAN need to notify UE in case System Information on BCCH is changed, by sending PAGING TYPE 1 message containing IE BCCH Modification Information. This is not covered in the test or in the test methods A, B or C.

Section 6.1.1.4

- All cells used in the test case belong to different PLMNs. This means that UE will trigger a location registration procedure each time a new cell is selected. However, Method B (see 34.123-1, section 6) is used in the test case. Method B means that SS is continuously paging the UE on all cells at the start of the test and responds to RACH requests from the UE with an RRC CONNECTION REJECT message, which causes the UE to return to Idle mode.
This would effectively mean that UE will never get registered, and will neither select the cell (PLMN) nor display the PLMN.

Instead, Method C should be used. Method C means that SS responds 'normally' RACH requests so Location Updating and Calls can be done. This is also in alignment with e.g. 6.1.1.3.

Section 6.1.2.1

- Several corrections and clarifications are needed.

Section 6.1.2.1

- Several corrections and clarifications are needed.

Correction based on comments from RAN2 review (Motorola).

Summary of change: ⌘ Section 6

1. Added as a general method that PAGING TYPE 1 message containing IE BCCH Modification Info, in case a test specifies that UE need to read System Information on BCCH. In each test, where SS need to notify UE, this is specifically stated.

2. Title of table 2 corrected to include also SIB1 (UMTS)

Section 6.1.1.4

1. Added that "IMSI attach" flag in the BCCH is set to allowed.
2. Method B changed to Method C.

Section 6.1.2.1

- To make the test sequence more clear, the test procedure expanded to show each specific step (avoid iteration)
- At test procedure step h, UE is switched off only, as there is no interface in UE in order to erase stored information for UE cell selection.
- When a cell is indicated as barred (CellBarred = Barred), the RRC protocol requires that IEs "Intra-frequency cell re-selection indicator" and "Tbarred" are included in the SIB. When a cell is indicated as not barred (CellBarred = Not barred), these parameters may not be included.
- For completeness, tables are completed with all relevant values, although default parameter settings are used.
- Some minor errors corrected

Section 6.1.2.2

- Test channel 1 is added to table a-c.
- At test procedure step h, UE is switched off only, as there is no interface in UE in order to erase stored information for UE cell selection.
The text in Test Procedure is aligned with the tables on parameters (SS changes the level of Cell 1 and Cell 2, and changes value of parameter Qoffset)
- For completeness, table entries for Cell 2 have been added, although default parameter settings used.
- In Test requirement, requirement 7 (step o), the time requirement has been corrected. UE is not aware of the BCCH modification until being notified by SS. The maximum time for UE to respond is corrected to also encounter for the SIB scheduling.
- dBm have been changed to dB in several places.
- Some minor errors corrected.

Section 6.1.2.2.4:

- Section 6.1.2.2.4 step a-c, Rs for Cell 2 changed to -70dB (was -50dB)

Consequences if ⌘ Test cases remain invalid.

not approved:

Clauses affected:	⌘	6.1.1.4, 6.1.2.1, 6.1.2.2		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
Other comments:	⌘	Affects R99 and Rel-4		

How to create CRs using this form:

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6 Idle mode operations

In the following paragraphs some explanatory text is given concerning the nature of the tests in this clause and the general behaviour of the SS is described.

Since the conformance requirements of most of the tests in this clause cannot be tested explicitly, testing is done implicitly by testing the UE behaviour from its responses to the SS.

In some cases, a test is performed in multiple stages in order that the requirements can be tested within the above constraints.

For any UE all the carriers are in its supported band(s) of operation.

Unless otherwise stated in the method of test, in all of the tests of this clause:

- the default values of the system information data fields given in TS 34.108 are used;
- the UE is equipped with a USIM containing default values. The USIM is in the idle updated state in the default location area with a TMSI assigned at the beginning of each test;
- the cells shall be configured such that $Squal > 0$ (FDD only) and $Srxlev > 0$ while applying $Qqualmin$ (FDD only) and $Qrxlevmin$ in table 6.1. In addition, for an FDD cell, the measured primary CPICH RSCP value shall be greater than or equal to -95 dBm (definition of High Quality cell, see TS 25.304, clause 5.1.2.2). In addition, for a TDD cell, the measured P-CCPCH RSCP shall be greater than or equal to -84 dBm (definition of High Quality cell, see TS 25.304, clause 5.1.2.2).

Three different methods A, B and C are applied in the tests:

Method A:

- the SS is continuously paging the UE on all cells at the start of the test and does not respond to RACH requests from the UE (which causes a cell reselection). Where a test specifies that the UE is not paged on a particular cell, only idle paging is transmitted. This method is similar to the one used in TS 51.010-1, clause 20.

Method B:

- the SS is continuously paging the UE on all cells at the start of the test and responds to RACH requests from the UE with an IMMEDIATE ASSIGNMENT REJECT (GERAN cell) or RRC CONNECTION REJECT (UTRAN cell) message which causes the UE to return to Idle mode. Where a test specifies that the UE is not paged in a particular cell, only idle paging is transmitted.

Method C:

- no continuously paging as in method A or B. Normal response to RACH requests so Location Updating and Calls can be done.

In case a test specifies that UE shall read System Information on BCCH while camped on a UTRAN cell, SS shall notify UE on the BCCH modification by sending a PAGING TYPE 1 message to UE. This message shall contain IE BCCH Modification Info with the following settings:

<u>Information Element</u>	<u>Value/remark</u>
<u>BCCH modification info</u> <u>MIB Value Tag</u>	<u>Set to the same value as the value tag of the MIB after the BCCH modification</u>
<u>BCCH Modification time</u>	<u>Not present</u>

Table 6.1: Default values of the system information fields

Parameter	Setting
IMSI attach/detach	Method A, B: Not allowed Method C: Allowed
Intra-frequency cell re-selection indicator	Allowed
Cell_selection_and_reselection_quality_measure	CPICH RSCP (FDD)
Qqualmin (FDD only)	-24 dB
Qrxlevmin (FDD)	-115 dBm
Qrxlevmin (TDD)	-103 dBm
DRX cycle length	1,28 s

CPICH_Ec/Io and SCH_Ec/Io shall fulfil requirements in TS 25.133, clause 8.1.2.2.1: The UE is able to identify a new detectable cell belonging to the monitored set within $T_{\text{identify intra}}$ when $\text{CPICH Ec/Io} \geq -20$ dB and $\text{SCH Ec/Io} \geq -20$ dB.

It is a UE option whether to indicate access technologies to the user (TS 23.122, clause 4.4.3.1.2). Therefore, for combined UTRAN/GSM tests, it is indicated in parentheses which access technology shall be indicated to the user if the UE has this capability.

If a parameter is indicated with a *, it means that the parameter is calculated internally in the UE and is only shown for clarification of the test procedure.

The PLMN numbers indicated in table 6.2 are used in test cases to associate a cell with an MCC and MNC for that cell. If no PLMN is explicitly specified, the default value is PLMN 1.

Table 6.2: Location Area Information (LAI) in System Information type 3 messages broadcast on the BCCH (GSM) or System Information Block Type 1 broadcast on the BCH (UMTS)

PLMN	MCC1	MCC2	MCC3	MNC1	MNC2	MNC3	LAC
1	0	0	1	0	1	Not present	x
2	0	0	2	1	1	Not present	x
3	0	0	4	2	1	Not present	x
4	0	0	5	3	1	Not present	x
5	0	0	6	4	1	Not present	x
6	0	0	7	5	1	Not present	x
7	0	0	8	6	1	Not present	x
8	0	0	9	7	1	Not present	x
9	0	1	0	0	2	Not present	x
10	0	1	1	1	2	Not present	x
11	0	1	2	2	2	Not present	x
12	0	1	3	3	2	Not present	x

NOTE: 'x' denotes any value.

References: TS 23.122, annex A and TS 23.003, clause 2.

The test channel numbers indicated in tables 6.3, 6.4 and 6.5 are used in test cases to associate a cell with a frequency for that cell. The frequencies for GSM and DCS cells in table 6.5 are identical to those used in TS 51.010-1, clause 26.3.1. The RF signal levels for GSM cells are given in table 6.5 for UTRAN FDD cells in TS 34.108, table 6.1.1 and for UTRAN TDD cells in TS 34.108, table 6.1.5. If no channel is explicitly specified, the default value is Test Channel 1.

Table 6.3: UTRA (FDD) test frequencies

Test Channel	ITU region 2			
	CPICH_Ec dBm / 3.84 MHz	UARFCN	CPICH_Ec dBm / 3.84 MHz	UARFCN
1	-72	9 613	-72	9 263
2	-75	9 663	-75	9 313
3	-78	9 713	-78	9 363
4	-81	9 763	-81	9 413
5	-84	9 813	-84	9 463
6	-87	9 863	-87	9 513

References: TS 34.108, clause 5.1.1 and TS 34.121, clause 4.

Table 6.4: UTRA TDD test frequencies

Test Channel	ITU region 2			
	P-CCPCH_ RSCP [dBm]	UARFCN	P-CCPCH_ RSCP [dBm]	UARFCN
1	-61	9 513	-61	9 263
2	-64	9 550	-64	9 537
3	-67	9 587	-67	9 663
4	-70	10 063	-70	9 937
5	-73	10 087	-73	9 563
6	-76	10 112	-76	9 637

References: TS 34.108, clause 5.1.2 and TS 34.122, clause 4.

Table 6.5: GSM/DCS test frequencies and levels

Test Channel	GSM 900		DCS 1 800	
	level dB μ Vemf() / dBm	BCCH ARFCN	level dB μ Vemf() / dBm	BCCH ARFCN
1	+65 / -48	1	+65 / -48	520
2	+63 / -50	7	+63 / -50	580
3	+61 / -52	39	+61 / -52	610
4	+55 / -58	65	+55 / -58	702
5	+59 / -54	66	+59 / -54	703
6	+57 / -56	85	+57 / -56	830
7	+55 / -58	97	+55 / -58	885
8	+53 / -60	124		

Test Channel	GSM 450		DCS 480	
	level dB μ Vemf() / dBm	BCCH ARFCN	level dB μ Vemf() / dBm	BCCH ARFCN
1	+65 / -48	259	+65 / -48	306
2	+63 / -50	261	+63 / -50	308
3	+61 / -52	267	+61 / -52	314
4	+55 / -58	268	+55 / -58	315
5	+59 / -54	281	+59 / -54	328
6	+57 / -56	288	+57 / -56	335
7	+55 / -58	291	+55 / -58	338
8	+53 / -60	293	+53 / -60	340

Test Channel	Multiband 900/1800		PCS 1900	
	level dB μ Vemf() / dBm	BCCH ARFCN	level dB μ Vemf() / dBm	BCCH ARFCN
1	+65 / -48	520	+65 / -48	512
2	+63 / -50	7	+63 / -50	520
3	+61 / -52	39	+61 / -52	580
4	+55 / -58	702	+55 / -58	610
5	+59 / -54	66	+59 / -54	702
6	+57 / -56	85	+57 / -56	703
7	+55 / -58	885	+55 / -58	800
8	+53 / -60	124		

Test Channel	Multiband 450/900		Multiband 480/900	
	level dB μ Vemf() / dBm	BCCH ARFCN	level dB μ Vemf() / dBm	BCCH ARFCN
1	+65 / -48	1	+65 / -48	1
2	+63 / -50	261	+63 / -50	308
3	+61 / -52	267	+61 / -52	314
4	+55 / -58	65	+55 / -58	65
5	+59 / -54	281	+59 / -54	328
6	+57 / -56	288	+57 / -56	335
7	+55 / -58	124	+55 / -58	124
8	+53 / -60	293	+53 / -60	340

Test Channel	Multiband 450/1800		Multiband 480/1800	
	level dB μ Vemf() / dBm	BCCH ARFCN	level dB μ Vemf() / dBm	BCCH ARFCN
1	+65 / -48	520	+65 / -48	520
2	+63 / -50	261	+63 / -50	308
3	+61 / -52	267	+61 / -52	314
4	+55 / -58	702	+55 / -58	702
5	+59 / -54	281	+59 / -54	328
6	+57 / -56	288	+57 / -56	335
7	+55 / -58	885	+55 / -58	885
8	+53 / -60	293	+53 / -60	340

For testing an E-GSM Mobile station, the BCCH ARFCN of GSM Test Channel 7 at GSM 900 column shall be 985 (instead of 97). For testing an R-GSM Mobile station, the BCCH ARFCN of GSM Test Channel 7 at GSM 900 column shall be 965 (instead of 97).

6.1.1.4 PLMN selection of RPLMN, HPLMN, UPLMN and OPLMN; Automatic mode

6.1.1.4.1 Definition

Test to verify that in Automatic Network Selection Mode, the UE selects PLMNs in a prioritized order. Forbidden PLMNs shall not be selected. If available, the RPLMN shall be selected at switch-on, otherwise the list shall include in priority order HPLMN, User-PLMN and Operator-PLMN. The last priority in the list is "Other PLMN/access technology combinations" which is not included in this test.

Only UTRAN cells and a UE equipped with a USIM with Radio Access Technology fields set to UTRAN are considered.

6.1.1.4.2 Conformance requirement

1. At switch on, or following recovery from lack of coverage, the MS selects the registered PLMN or equivalent PLMN (if it is available) using all access technologies that the MS is capable of and if necessary (in the case of recovery from lack of coverage, see TS 23.122, clause 4.5.2) attempts to perform a Location Registration.

If successful registration is achieved, the MS indicates the selected PLMN.

If there is no registered PLMN, or if registration is not possible due to the PLMN being unavailable or registration failure, the MS follows either Automatic or Manual Network Selection Mode Procedure depending on its operating mode.

2. Automatic Network Selection Mode Procedure:

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

- 2.1 HPLMN (if not previously selected);
- 2.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 2.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);
- 2.4 Other PLMN/access technology combinations with received high quality signal in random order;
- 2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

If successful registration is achieved, the MS indicates the selected PLMN.

If registration cannot be achieved because no PLMNs are available and allowable, the MS indicates "no service" to the user, waits until a new PLMN is available and allowable and then repeats the procedure.

If there were one or more PLMNs which were available and allowable, but an LR failure made registration on those PLMNs unsuccessful or an entry in the "forbidden LAs for regional provision of service" list prevented a registration attempt, the MS selects the first such PLMN again and enters a limited service state.

3. If a "PLMN not allowed" message is received by an MS in response to an LR request from a VPLMN, that VPLMN is added to a list of "forbidden PLMNs" in the SIM and thereafter that VPLMN will not be accessed by the MS when in automatic mode. A PLMN is removed from the "forbidden PLMNs" list if, after a subsequent manual selection of that PLMN, there is a successful LR. This list is retained when the MS is switched off or the SIM is removed. The HPLMN shall not be stored on the list of "forbidden PLMNs".

References

1. TS 23.122, clause 4.4.3.1.
2. TS 23.122, clause 4.4.3.1.1.
3. TS 23.122, clause 3.1.

NOTE: TS 31.102 defines the USIM fields.

6.1.1.4.3 Test purpose

1. To verify that if available, the RPLMN is selected at switch-on.
2. To verify that in Automatic Network Selection Mode Procedure, the UE selects the RPLMN, HPLMN, UPLMN and OPLMN in a prioritized order.
3. To verify that forbidden PLMNs are not selected.

6.1.1.4.4 Method of test

Initial conditions

The UE is in automatic PLMN selection mode.

["IMSI attach" flag in the BCCH is set to allowed.](#)

Cell levels are from table 6.3 (FDD).

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_ Ec [dBm/3.84 MHz] (FDD)	P-CCPCH_ RSCP [dBm] (TDD)	Test Channel	PLMN
Cell 1	-72	-61	1	PLMN 1
Cell 2	-75	-64	2	PLMN 2
Cell 3	-78	-67	3	PLMN 3
Cell 4	-81	-70	4	PLMN 4
Cell 5	-84	-73	5	PLMN 5
Cell 6	-87	-76	6	PLMN 6

The UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF _{LOCI}		PLMN 1
EF _{HPLMNwAcT}	1 st	PLMN 2
EF _{PLMNwAcT}	1 st	PLMN 3
	2 nd	PLMN 4
EF _{OPLMNwAcT}	1 st	PLMN 5
	2 nd	PLMN 6
EF _{FPLMN}		PLMN 3

Test procedure

Method **BC** is applied.

- a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE.
- d) Cell 1 is switched off.
- e) The SS waits for random access requests from the UE.
- f) Cell 2 is switched off.
- g) The SS waits for random access requests from the UE.
- i) Cell 4 is switched off.
- j) The SS waits for random access requests from the UE.

- k) Cell 5 is switched off.
- l) The SS waits for random access requests from the UE.
- m) Cell 6 is switched off.

6.1.1.4.5 Test Requirements

- 1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.
- 2) In step e), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 2.
- 3) In step g), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 4.
- 4) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN 5.
- 5) In step l), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 6.
- 6) After step m), the UE shall inform that only limited service is possible

6.1.2.1 Cell reselection

6.1.2.1.1 Definition

Test to verify that the UE performs the cell reselection correctly for intra/inter-frequency cells if the serving cell becomes barred or $S < 0$.

6.1.2.1.2 Conformance requirement

1. When camped on a cell, the UE shall regularly search for a better cell according to the cell reselection criteria. If a better cell is found, that cell is selected. The change of cell may imply a change of RAT.
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.
 - 2.1 The cell is part of the selected PLMN or of a PLMN considered as equivalent by the UE according to the information provided by the NAS.
 - 2.2 The cell is not barred.
 - 2.3 The cell is not part of the list of "forbidden LAs for roaming".
 - 2.4 The cell selection criteria are fulfilled.
3. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:
 - 3.1 UE internal triggers, so as to meet performance as specified in TS 25.133 for FDD mode and in TS 25.123 for TDD mode.
 - 3.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified.
4. Cell Reselection Criteria:
 - 4.1 The UE shall perform ranking of all cells that fulfil the S criterion.
 - 4.2 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If an FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell. If a TDD cell is ranked as the best cell, the UE shall perform cell re-selection to that TDD cell.
 - 4.3 In all cases, the UE shall reselect the new cell, only if the cell reselection criteria are fulfilled during a time interval $T_{reselection}$.
 - 4.4 The cell-ranking criterion R is derived from Q, Q_{hyst} , Q_{offset} , $TEMP_OFFSET$ and $PENALTY_TIME$. However, $TEMP_OFFSET_n$ and $PENALTY_TIME_n$ are only applicable if the usage of HCS is indicated in system information.
5. When cell status "barred" is indicated, the UE shall select another cell according to the following rule:
 - 5.1 If the "Intra-frequency cell re-selection indicator" IE in Cell Access Restriction IE is set to value "allowed", the UE may select another cell on the same frequency if selection/re-selection criteria are fulfilled.
 - 5.2 If the "Intra-frequency cell re-selection indicator" IE is set to "not allowed" the UE shall not re-select a cell on the same frequency as the barred cell. For emergency call, the Intra-frequency cell re-selection indicator IE shall be ignored, i.e. even if it is set to "not allowed" the UE may select another intra-frequency cell.

References

1. TS 25.304, clause 5.2.1.
2. TS 25.304, clause 4.3.
3. TS 25.304, clause 5.2.5.1.
4. TS 25.304, clause 5.2.6.1.4.

5. TS 25.304, clause 5.3.1.1.

6.1.2.1.3 Test purpose

1. To verify that the UE performs cell reselection on the following occasions:

1.1 Serving cell becomes barred;

1.2 $S < 0$ for serving cell.

2. To verify conformance requirement 5.

NOTE: Reselection triggered by the cell becoming a part of a forbidden registration area is tested in clause 9.4.2.3 and clause 9.4.2.4.

6.1.2.1.4 Method of test

Initial conditions

Treselection, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME are not used, so the cell-ranking criterion R equals CPICH_RSCP for FDD cells, and P-CCPCH RSCP for TDD cells.

Step a-c (FDD):

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	1	2
CPICH_Ec	dBm/3.84 MHz	-60	-70	-80
Qrxlevmin	dBm	-115	-115	-115
Srxlev*	dBm	55	45	35
Intra-frequency cell re-selection indicator		Not Allowed	Not Allowed	Not Allowed
CellBarred		⊘Not barred	⊘Not barred	⊘Not barred

Step a-c (TDD):

Parameter	Unit	Cell 1	Cell 2	Cell 3
P-CCPCH RSCP	dBm	-69	-71	-73
Qrxlevmin	dBm	-103	-103	-103
Srxlev*	dB	34	32	30

Step d-f:

CellBarred		⊘→1Not barred -> Barred	⊘ Not barred	⊘Not barred
Intra-frequency cell re-selection indicator		Not allowed		
Tbarred		10s		

Step g-h:

Intra-frequency cell re-selection indicator		Not Allowed -> Allowed	Not Allowed -> Allowed	Not Allowed -> Allowed
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[Step i-k \(FDD\):](#)

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>	<u>Cell 2</u>	<u>Cell 3</u>
<u>CellBarred</u>		<u>Barred -> Not barred</u>	<u>Not barred</u>	<u>Not barred</u>

Step i-l-m (FDD):

Qrxlevmin	dBm	<u>-115 -> -50</u>	-115	-115
Srxlev*	dBm	<u>55 -> -10</u>	45	35

Step i-l-m (TDD):

Qrxlevmin		<u>-103 -> -68</u>	-103	-103
Srxlev*		<u>34 -> -6</u>	32	30

Test procedure

Method B is applied.

- a) The SS activates Cell 1-3 and monitors them for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE.
- d) The SS sets Cell 1 to be barred. The SS notifies UE of the BCCH modification
- e) The SS waits for random access requests from the UE.
- f) The SS sets "Intra-frequency cell re-selection indicator" to "Allowed". The SS notifies UE of the BCCH modification
- g) The SS waits for random access requests from the UE.
- h) ~~The stored information cell selection list in the UE is deleted and~~ The UE is switched off.
- i) ~~Step a e) is repeated except that in step d) for FDD cells, Qrxlevmin is increased to -50 dBm, or in step d) for TDD cells, Qrxlevmin is increased to -68, so S will become negative instead of the cell being barred while maintaining the same RF level. The SS activates Cell 1-3 and monitors them for random access requests from the UE.~~
- j) The UE is switched on.
- k) The SS waits for random access requests from the UE.
- l) For FDD cell, Qrxlevmin is increased to -50 dBm, so S will become negative. For TDD cell, Qrxlevmin is increased to -68dBm, so S will become negative. The SS notifies UE of the BCCH modification
- m) The SS waits for random access requests from the UE.

6.1.2.1.5 Test requirements

- 1) In step c), after the UE has responded on Cell 1, it shall not respond on any other cell within 1 min.
- 2) In step e), the UE shall respond on Cell 3.
- 3) In step g), the UE shall respond on Cell 2.
- 4) In step i-k), after the UE has responded on Cell 1, it shall not respond on any other cell within 1 min.

5) [In step m](#)), the UE shall respond on Cell 2.

6.1.2.2 Cell reselection using Qhyst, Qoffset and Treselection

6.1.2.2.1 Definition

Test to verify that the UE performs the cell reselection correctly if system information parameters Qoffset, Qhyst and Treselection are applied for non-hierarchical cell structures. TEMP_OFFSET and PENALTY_TIME are only applicable when HCS is applied and are tested in clauses 6.1.2.4 and 6.1.2.5.

6.1.2.2.2 Conformance requirement

1. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:
 - 1.1 UE internal triggers, so as to meet performance as specified in TS 25.133 for FDD mode and in TS 25.123 for TDD mode.
 - 1.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified.
2. Cell Reselection Criteria:
 - 2.1 The UE shall perform ranking of all cells that fulfil the S criterion.
 - 2.2 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If an FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell. If a TDD cell is ranked as the best cell, the UE shall perform cell re-selection to that TDD cell.
 - 2.3 In all cases, the UE shall reselect the new cell, only if the cell reselection criteria are fulfilled during a time interval Treselection.
 - 2.4 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME. However, TEMP_OFFSETn and PENALTY_TIMEn are only applicable if the usage of HCS is indicated in system information.

References

1. TS 25.304, clause 5.2.5.1.
2. TS 25.304, clause 5.2.6.1.4.

6.1.2.2.3 Test purpose

1. To verify that the UE calculates R from Qhyst and Qoffset and that the modification of these parameters on the BCCH triggers the cell reselection evaluation process. TEMP_OFFSET and PENALTY_TIME are not applied.
2. To verify that the UE reselects the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

6.1.2.2.4 Method of test

Initial conditions

For FDD only:

Step a-c:

Parameter	Unit	Cell 1	Cell 2
<u>Test channel</u>		<u>1</u>	<u>1</u>
CPICH_Ec	dBm/3.84 MHz	-60	-70
Qhyst1 _s	dB m	20	<u>0</u>
R _s [*]	dB m	-40	<u>-70</u>
R _n [*]	dB m	-70	<u>-60</u>

Step d-e:

CPICH_Ec	dBm/3.84 MHz	-60 -> -70	-70 -> -60
R _s [*]	dB m	-40 -> -50	<u>-70 -> -60</u>
R _n [*]	dB m	-70 -> -60	<u>-60 -> -70</u>

Step f-g:

Qhyst1 _s	dB m	20 -> 0	<u>0</u>
R _s [*]	dB m	-50 -> -70	<u>-60</u>
R _n [*]	dB m	-60	<u>-70</u>

Step h-j:

CPICH_Ec	dBm/3.84 MHz	<u>-70 -> -60</u>	<u>-60 -> -70</u>
Qoffset1 _{s,n}	dB m	<u>0 -> 20</u>	<u>0</u>
R _s [*]	dB m	<u>-70 -> -60</u>	<u>-60 -> -70</u>
R _n [*]	dB m	<u>-60 -> -90</u>	<u>-70 -> -60</u>

Step k-l:

CPICH_Ec	dBm/3.84 MHz	-60 -> -70	-70 -> -60
R _s [*]	dB m	-60 -> -70	<u>-70 -> -60</u>
R _n [*]	dB m	-90 -> -80	<u>-60 -> -70</u>

Step m-n:

Qoffset1 _{s,n}	dB m	20 -> 0	<u>0</u>
R _s [*]	dB m	-70	<u>-60</u>
R _n [*]	dB m	-80 -> -60	<u>-70</u>

Step o-p:

Treselection _s	s	30	<u>0</u>
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For TDD only:

Step a-c:

Parameter	Unit	Cell 1	Cell 2
P-CCPCH RSCP	dBm	-68	-71
Qhyst1 _s	dB	10	<u>0</u>
R _s [*]	dB	-58	<u>-71</u>
R _n [*]	dB	-71	<u>-68</u>

Step d-e:

P-CCPCH RSCP	dBm	-68 -> -71	-71 -> -68
R _s [*]	dB	-58 -> -61	<u>-68</u>
R _n [*]	dB	-71 -> -68	<u>-71</u>

Step f-g:

Qhyst1 _s	dB	10 -> 0	<u>0</u>
R _s [*]	dB	-61 -> -71	<u>-68</u>
R _n [*]	dB	-68	<u>-71</u>

Step h-j:

P-CCPCH RSCP	dBm	<u>-71 -> -68</u>	<u>-68 -> -71</u>
Qoffset1 _{s,n}	dB	<u>0 -> 10</u>	<u>0</u>
R _s *	dB	<u>-71 -> -68</u>	<u>-71</u>
R _n *	dB	<u>-68 -> -81</u>	<u>-68</u>

Step k-l:

P-CCPCH RSCP	dBm	-68 -> -71	-71 -> -68
R _s *	dB	-68 -> -71	<u>-71 -> -68</u>
R _n *	dB	-81 -> -78	<u>-68 -> -71</u>

Step m-n:

Qoffset1 _{s,n}	dB	10 -> 0	<u>0</u>
R _s *	dB	-71	<u>-68</u>
R _n *	dB	-78 -> -68	<u>-71</u>

Step o-p:

Treselection _s	s	<u>0 -> 30</u>	<u>0</u>
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Test procedure

Method B is applied.

- a) The SS activates Cell 1 and 2 and monitors them for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits to see if there is any random access requests from the UE.
- d) The SS changes the level of Cell 1 and 2 and waits for 10 s (TS 25.133, A.4.2.1.2 for FDD mode and TS 25.123, A.4.2.1.2 for TDD mode).
- e) The SS waits for random access requests from the UE.
- f) The SS resets Qhyst for Cell 1 and notifies UE of the BCCH modification
- g) The SS waits for random access requests from the UE.
- h) ~~The stored information cell selection list in the UE is deleted and t~~The UE is switched off. The SS changes the level of Cell 1 and Cell 2. The SS changes Qoffset in Cell 1.
- i) The UE is switched on.
- j) The SS waits to see if there is any random access requests from the UE.
- k) The SS changes the level of Cell 1 and 2 and waits for 10 s (TS 25.133, clause A.4.2.1.2 for FDD mode and TS 25.123, clause A.4.2.1.2 for TDD mode).
- l) The SS waits for random access requests from the UE.
- m) The SS resets Qoffset for Cell 1 and notifies UE of the BCCH modification.
- n) The SS waits for random access requests from the UE.
- o) Step h-n) is repeated except that Treselection is 30 s

6.1.2.2.5 Test Requirements

- 1) In step c), after the UE has responded on Cell 1, it shall not respond on any other cell within 1 min.
- 2) In step e), the UE shall keep responding on Cell 1.
- 3) In step g), the UE shall respond on Cell 2.

- 4) In step j), the UE shall select a cell to camp on and eventually make a reselection to Cell 1.
- 5) In step l), the UE shall keep responding on Cell 1.
- 6) In step n), the UE shall respond on Cell 2.
- 7) In step o), the UE shall respond as in previous steps except that when reselecting to Cell 2, there shall be no response from the UE on Cell 2 within 28 s of ~~broadcasting-Qoffset~~ notifying UE on the BCCH modification, but the UE shall respond on Cell 2 within ~~35~~4 s.

NOTE: Minimum time set by Treselection – 2 s tolerance. Maximum time set by Treselection + 1 280 msec. for DRX cycle+ 1280 ms for system information block type scheduling + 2 s tolerance

CHANGE REQUEST

⌘ **34.123-1 CR 196** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to clause 8.2 of TS 34.123-1		
Source:	⌘ MCI, ETSI, ERICSSON, ASUSTeK, NTTDoCoMo		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-17
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-4 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)

Reason for change: ⌘ **T1S-020135r (MCI, ETSI)**
Editorial.

T1S-020141 (ASUSTeK)
All the IE "UTRAN DRX cycle length coefficient" for CELL/URA UPDATE CONFIRM and reconfiguration (e.g. RADIO BEARER SETUP, RADIO BEARER RELEASE, etc) messages defined in TS 34.123-1 Annex A are set to "Not present". However, the IE "UTRAN DRX cycle length coefficient" should be set to any value between 3 to 9 while the IE "RRC State Indicator" is set to "CELL_PCH" or "URA_PCH" per 25.331 v3.a.0 section 8.3.1.6, 8.2.2.3 and 25.331 CR 1108r1, otherwise the UE will set the variable INVALID_CONFIGURATION to TRUE since the UE could not know when to listen the PCH.

T1S-020195/r1 (ERICSSON)
Corrections to RB setup and RB release procedures

T1S-020208/r1/r2 (ERICSSON)
The following issues are addressed for these test cases:
More realistic scenario for Transport format combination control with a restriction of a user data radio access bearer instead of the signalling radio bearer.

Proposal from MCI (circulated via T1S reflector on 3/5/2002)
To check the UE is in the correct state.

Summary of change: ⌘ All modification request (listed as below) were merged by DoCoMo. And editorial

modifications were done.

Note1: Two modification requests were proposed to Expected sequence of 8.2.3.15.4. So step number was corrected by co-ordinator.

Note2: Editorial modifications highlighted by green were added as revision 2;

“Annex A” → “[9](TS 34.108) Clause 9”

T1S-020135r (MCI, ETSI)

Corrections of spelling errors.

In clause 8.2.3.8, UE needs a new C-RNTI value, otherwise the UE will keep performing cell update procedure. Therefore in step 5, IE “New C-RNTI” is added and step 6 is added to ensure UE replies with UTRAN MOBILITY INFORMATION CONFIRM message.

T1S-020141 (ASUSTeK)

The IE “UTRAN DRX cycle length coefficient” is set to 3 in all messages in which the IE “RRC State Indicator” is set to “CELL_PCH” or “URA_PCH”.

T1S-020195 (ERICSSON) as CR-8.2.3.15 r1 highlighted by yellow as rev1 highlighted by blue

Test requirements in clause 8.2.1 and 8.2.3

1. --8.2.1.1

- Comment about integrity check info removed. This IE is included.
- Specific Message Contents with reference to Annex A is added.

2. --8.2.1.9

- UTRAN MOBILITY UPDATE CONFIRM corrected to UTRAN MOBILITY INFORMATION CONFIRM.

3. --8.2.3.1

- Specific Message Contents with reference to Annex A is added.

4. --8.2.3.8 → implicated in T1S-020135r1

- C-RNTI added in step 5. The C-RNTI is needed in CELL_FACH state.
- UTRAN MOBILITY INFORMATION CONFIRM added.

5. --8.2.3.15

- The comment in step two is removed due to the fact that the UE does not need to select a PRACH and S-CCPCH, since it is still in CELL_FACH and only releasing a Radio Bearer. The rest of the comment is already stated in the test procedure.?
- RADIO BEARER RECONFIGURATION is added to verify that the UE has released the intended RAB. A specific message content needs to be used, since only reconfiguration of a non-existing RAB triggers a failure, not a non-existing RB.

6. --8.2.3.18 → rejected (T1S#21) proposed as rev1

- SS should wait 10 seconds for the UE read the broadcast channel before transmitting the Paging type 1.

→ This sentence on expected sequence step-2a was modified by T1SIG decision as below.

"SS waits 5 seconds to allow the UE to read system information before the next step."

7. --8.2.3.19 → rejected (T1S#21)

- SS should wait 10 seconds for the UE read the broadcast channel before transmitting the Paging type 1.

→ This sentence on expected sequence step-2a was modified by T1SIG decision as below.

"SS waits 5 seconds to allow the UE to read system information before the next step."

T1S-020208/r1/r2 (ERICSSON)

The following changes are made:

Test scenario is changed to concern a user data radio access bearer instead of the DCCH.

Added step in test that the UE should refrain from sending user data on transport channel 1 when that is restricted. The UE capability enquire procedure steps are kept to make sure that the UE still transmit on the DCCH that is not restricted.

Minor rewording and editorial corrections.

Proposal from MCI (circulated via T1S reflector on 3/5/2002)

In clause 8.2.1.1, step 3 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.

In clause 8.2.1.8, step 3 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.

In clause 8.2.1.9, step 8 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.

In clause 8.2.1.10, step 3 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.

In clause 8.2.3.1, step 3 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.

In clause 8.2.3.7, step 4 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.

In clause 8.2.3.8, step 8 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.

In clause 8.2.3.9, step 4 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.

In clause 8.2.3.15, step 4 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.

In clause 8.2.3.18, step 3 and 4 are replaced with a new step 3 to call for procedure C.4. This is to check that the UE is in CELL_PCH state.

In clause 8.2.3.19, step 3 and 4 are replaced with a new step 3 to call for procedure C.5. This is to check that the UE is in URA_PCH state.

Consequences if ☘ T1S-020135r (MCI, ETSI)

not approved:

The test prose cannot test UE correctly.
T1S-020141 (ASUSTeK)
 The UE could not be tested correctly.
T1S-020195/r1 (ERICSSON)
 Test cases not properly performed
T1S-020208/r1/r2 (ERICSSON)
 Test cases reflects an unrealistic scenario that is unlikely to be used in real networks.
Proposal from MCI (circulated via T1S reflector on 3/5/2002)
 The test cases are incomplete.

Clauses affected: ⌘ **T1S-020135r (MCI, ETSI)**
 8.2.3.8
T1S-020141 (ASUSTeK)
 8.2.3.18, 8.2.3.19
T1S-020195/r1 (ERICSSON)
 8.2.1.1, 8.2.1.9, 8.2.3.1, 8.2.3.8(implicated), 8.2.3.15, 8.2.3.18(proposed as rev1), 8.2.3.19(proposed as rev1)
T1S-020208/r1/r2 (ERICSSON)
 8.2.5.1, 8.2.5.2
Proposal from MCI (circulated via T1S reflector on 3/5/2002)
 8.2.1.1, 8.2.1.8, 8.2.1.9, 8.2.1.10, 8.2.3.1, 8.2.3.7, 8.2.3.8, 8.2.3.9, 8.2.3.15, 8.2.3.18, 8.2.3.19

Other specs affected: ⌘ Other core specifications ⌘
 Test specifications
 O&M Specifications

Other comments: ⌘ Affects R99 and Rel-4

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<START of modified section>

8.2.1 Radio Bearer Establishment

8.2.1.1 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success

8.2.1.1.1 Definition

8.2.1.1.2 Conformance requirement

The UE shall correctly set up a new radio bearer according to a RADIO BEARER SETUP message and responds with a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.1.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) or PS_DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message to the UE . This message requests the establishment of radio access bearer. After the UE receives this message, it configures them and establishes a radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	This message do not contain IE "integrity-check info" and "integrity protection mode info"
2		→	RADIO BEARER SETUP COMPLETE	This message do not contain "integrity-check info" and "Uplink integrity activation info"
3		↔	<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

~~None.~~ [RADIO BEARER SETUP](#)

[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 ~~Annex-A 9\]\(TS34.108\) Clause 9.~~](#)

8.2.1.1.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

transmit a UE CAPABILITY INFORMATION message on the uplink DCCH using AM RLC.

<END of modified section>

<START of modified section>

8.2.1.8 Radio Bearer Establishment for transition from CELL_DCH to CELL_FACH: Success

8.2.1.8.1 Definition

8.2.1.8.2 Conformance requirement

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message and responds with a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.8.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message.

8.2.1.8.4 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.

Test Procedure

The UE is in CELL_DCH state, after the test operator is asked 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 transits from CELL_DCH to CELL_FACH state. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state. [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		←	RADIO BEARER SETUP	SS requests test operator to make an outgoing packet-switched data call.
2		→	RADIO BEARER SETUP COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 or SIB6 after entering CELL FACH state.
3		↔	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

For RADIO BEARER SETUP message in step 1, use the message sub-type indicated as "Packet to CELL_FACH from CELL_DCH in PS" found in [Annex A\[9\]\(TS34-108\) Clause 9](#) with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

8.2.1.8.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message.

<END of modified section>

<START of modified section>

8.2.1.9 Radio Bearer Establishment for transition from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.1.9.1 Definition

8.2.1.9.2 Conformance requirement

1. If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:
 -
 - if the contents of the variable C_RNTI is empty:
 - perform a cell update procedure according to clause 8.3.1 using the cause "Cell reselection";
2. 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 "Cipherring 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:

- transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.
3. In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:
- 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, 8.3.1, 8.2.2.4.

8.2.1.9.3 Test purpose

1. To verify that the UE when receiving a RADIO BEARER SETUP message not including a value for C-RNTI initiate a cell update procedure and indicating the cause "Cell reselection".
2. To verify that the UE when the CELL UPDATE CONFIRM message does not include "RB information elements", "Transport channel information elements" nor "Physical channel information elements" but include the IE "New C-RNTI" transmit a UTRAN MOBILITY INFORMATION CONFIRM message.
3. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message after it completes the cell update procedure.

8.2.1.9.4 Method of test

Initial Condition

System Simulator: 1 cell- Cell 1 is active.

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a RADIO BEARER SETUP message which includes IE "Primary CPICH info" and no dedicated physical channel information, to request the UE to transit from CELL_DCH to CELL_FACH. Due to absence of the C-RNTI in the RADIO BEARER SETUP message the UE shall initiate the cell update procedure even if the UE selects the same cell as indicated by the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD). 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 CCCH after receiving CELL UPDATE message. The UE transmits a UTRAN MOBILITY ~~UPDATE~~ INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC. SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	RADIO BEARER SETUP	Assigned the transition from CELL_DCH to CELL_FACH
4		→	CELL UPDATE	The value "cell reselection" set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	C-RNTI included
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	RADIO BEARER SETUP COMPLETE	
8		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 3) (FDD)

The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL_FACH from CELL_DCH in PS" as found in [Annex-A \[9\] \(TS34.108\) Clause 9](#).

RADIO BEARER SETUP (Step 3) (TDD)

The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL_FACH from CELL_DCH in PS" as found in [Annex-A \[9\] \(TS34.108\) Clause 9](#) 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 \[9\] \(TS34.108\) Clause 9](#) with the following exceptions:

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

CELL UPDATE CONFIRM (Step 5)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in [Annex-A \[9\] \(TS34.108\) Clause 9](#), with the following exceptions:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

UTRAN MOBILITY ~~UPDATE~~ INFORMATIONCONFIRM (Step 6)

The contents of UTRAN MOBILITY ~~UPDATE~~ INFORMATIONCONFIRM message is identical as "UTRAN MOBILITY ~~UPDATE~~ INFORMATIONCONFIRM message" as found in [Annex-A \[9\] \(TS34.108\) Clause 9](#).

RADIO BEARER SETUP COMPLETE (Step 7)

The contents of RADIO BEARER SETUP COMPLETE message is identical as "RADIO BEARER SETUP COMPLETE message" as found in [Annex-A \[9\]\(TS34.108\) Clause 9](#).

8.2.1.9.5 Test requirement

1. After step 3 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".
2. After step 5 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.
3. After step 6 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

<END of modified section>

<START of modified section>

8.2.1.10 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

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message and responds with a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1.

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.

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

Test Procedure

The UE is in CELL_FACH state, after SS prompts the test operator to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE. After the UE receives this message, it configures them and establishes the required radio bearers. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. [SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.](#)

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	
2		→	RADIO BEARER SETUP COMPLETE	
3		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

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 [Annex A.9\]\(TS34.108\) Clause 9](#).

8.2.1.10.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

<END of modified section>

<START of modified section>

8.2.3 Radio Bearer Release

8.2.3.1 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Success

8.2.3.1.1 Definition

8.2.3.1.2 Conformance requirement

The UE shall correctly release a radio bearer according to a RADIO BEARER RELEASE message and responds with a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.1.3 Test purpose

To confirm that the UE releases the existing radio bearer according to a RADIO BEARER RELEASE message.

8.2.3.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

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 state. The SS transmits a RADIO BEARER RELEASE message to the UE. The UE releases the radio access bearer and transmits 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		→	RADIO BEARER RELEASE COMPLETE	Release the radio bearer.
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 RELEASE

None.

8.2.3.1.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

<END of modified section>

<START of modified section>

8.2.3.7 Radio Bearer Release for transition from CELL_DCH to CELL_FACH: Success

8.2.3.7.1 Definition

8.2.3.7.2 Conformance requirement

The UE shall correctly release a radio bearer according to a RADIO BEARER RELEASE message and responds with a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.7.3 Test purpose

To confirm that the UE release the existing the radio bearer according to a RADIO BEARER RELEASE message.

8.2.3.7.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: PS-DTCH+DCCH_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 RADIO BEARER RELEASE message to the UE. The UE releases the radio access bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. [SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.](#)

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	SS releases the radio bearer in the fashion specified in the message and allocate common channel resources to carry the remaining radio bearers.
2				The UE selects PRACH and S-CCPCH indicated in SIB5 and SIB6 after entering CELL_FACH state. The UE shall release dedicated channels, and reconfigure the remaining radio bearers using the common channel.
3		→	RADIO BEARER RELEASE COMPLETE	
4		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [Annex-A\[9\]\(TS34.108\) Clause 9](#) with the following exception:

Information Element	Value/remark
New C-RNTI	0000 0000 0000 0001B

8.2.3.7.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message.

<END of modified section>

<START of modified section>

8.2.3.8 Radio Bearer Release for transition from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.3.8.1 Definition

8.2.3.8.2 Conformance requirement

The UE shall initiate the cell update procedure when the UE performs cell reselection during a radio bearer release procedure. After the UE completes cell update procedure, the UE shall continue to perform the radio bearer release procedure and correctly release the radio bearer.

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.8.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE COMPLETE message after the UE completes a cell update procedure.

8.2.3.8.4 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 RADIO BEARER RELEASE message to request the UE to transit from CELL_DCH to CELL_FACH. The UE initiates the cell update procedure because the UE cannot detect the specified cell in this message. 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 CCCH after receiving CELL UPDATE message. [The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.](#) The UE transmits a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC. [SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.](#)

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	RADIO BEARER RELEASE	Assigned the transition from CELL_DCH to CELL_FACH
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 Void	
7		→	RADIO BEARER RELEASE COMPLETE	
8		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE (Step 3) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [Annex-A19\[TS34_108\] Clause 9](#) with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CPICH info - Primary scrambling code	150

RADIO BEARER RELEASE (Step 3) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [Annex-A\[9\]\(TS34.108\) Clause 9](#) 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\[9\]\(TS34.108\) Clause 9](#) 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\[9\]\(TS34.108\) Clause 9](#), 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.](#)

~~CELL UPDATE CONFIRM (Step 5)~~

~~The contents of CELL UPDATE CONFIRM message is same as "CELL UPDATE CONFIRM message" as found in Annex A.~~

8.2.3.8.5 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 RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

<END of modified section>

<START of modified section>

8.2.3.9 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Success

8.2.3.9.1 Definition

8.2.3.9.2 Conformance requirement

The UE shall correctly release radio bearers according to a RADIO BEARER RELEASE message and responds with a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3.

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.

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message to the UE. In this message, SS commands the UE to release radio access bearers on common physical channel. At the same time, SS allocates DPCH to support the affected radio bearers. The UE shall release the indicated radio access bearers and transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. [SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.](#)

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2				UE shall release the radio access bearers carried by common physical channel.
3		→	RADIO BEARER RELEASE COMPLETE	
4		↔	CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in [Annex A9\]\(TS34.108\) Clause 9.](#)

8.2.3.9.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message using the dedicated physical channel allocated.

<END of modified section>

<START of modified section>

8.2.3.15 Radio Bearer Release for transition from CELL_FACH to CELL_FACH: Success

8.2.3.15.1 Definition

8.2.3.15.2 Conformance requirement

The UE shall correctly release a radio bearer according to the RADIO BEARER RELEASE message received and responds with a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.15.3 Test purpose

To confirm that the UE releases the existing the radio bearer(s) according to the RADIO BEARER RELEASE message.

8.2.3.15.4 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. The SS transmits a RADIO BEARER RELEASE message to the UE. The UE releases the radio access bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. [SS calls for generic procedure C.2 to check that UE is in CELL_FACH state.](#)

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2			Void	The UE selects PRACH and S-CCPCH indicated in SIB5 and SIB6. The UE shall release the requested radio bearer.
3		→	RADIO BEARER RELEASE COMPLETE	
4		←	RADIO BEARER RECONFIGURATION	The IE "RAB information to reconfigure" is included with the same RAB identity as was released with the RADIO BEARER RELEASE message.
5		→	RADIO BEARER RECONFIGURATION FAILURE	The UE responds with failure, in case the RB is properly removed
6		↔	CALL C.2	If the test result of C.2 indicates that UE is in CELL_FACH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in [Annex-A\]9\]\(TS34 108\) Clause 9.](#)

[RADIO BEARER RECONFIGURATION \(Step 4\)](#)

[The contents of RADIO BEARER RECONFIGURATION message in this test case is specified below:](#)

Information Element	Condition	Value/remark
Message Type RRC transaction identifier Integrity check info - message authentication code - RRC message sequence number Integrity protection mode info Ciphering mode info Activation time New U-RNTI New C-RNTI		Arbitrarily selects an integer between 0 and 3 The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. 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. Not Present Not Present Now Not Present Not Present
RRC State indicator		CELL_FACH
UTRAN DRX cycle length coefficient CN information info URA identity RAB information to reconfigure list - RAB information to reconfigure - RAB identity - CN domain identity - NAS Synchronization Indicator		Not Present Not Present Not Present (AM DTCH for PS domain) 0000 0101B PS domain Not Present
RB information to reconfigure list - RB information to reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - RB mapping info - RB stop/continue		TS25.331 specifies that "Although this IE is not always required, need is MP to align with ASN.1". (Dummy) 1 Not Present Not Present Not Present Not Present Not Present
RB information to be affected list		Not Present
UL Transport channel information for all transport channels		Not Present
Deleted TrCH information list		Not Present
Added or Reconfigured TrCH information list		Not Present
CHOICE mode		Not Present
Deleted DL TrCH information list		Not Present
Added or Reconfigured DL TrCH information list		Not Present
Frequency info		Not Present
Maximum allowed UL TX power		Not Present
CHOICE channel requirement		Not Present
CHOICE Mode - Downlink PDSCH information		FDD Not Present
Downlink information common for all radio links		Not Present
Downlink information per radio link list		Not Present

RADIO BEARER RECONFIGURATION FAILURE (step 5)

The contents of RADIO BEARER RECONFIGURATION FAILURE message in this test case is the same as the RADIO BEARER RECONFIGURATION FAILURE message as found in Annex A [9] (TS34.108) Clause 9, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.3.15.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message using AM RLC on the common physical channel.

After step 4, UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message to verify that the RAB is properly removed.

<END of modified section>

<START of modified section>

8.2.3.18 Radio Bearer Release from CELL_DCH to CELL_PCH: Success

8.2.3.18.1 Definition

8.2.3.18.2 Conformance requirement

The UE shall transmit a RADIO BEARER RELEASE COMPLETE message on uplink DCCH using AM RLC before it transits from CELL_DCH to CELL_PCH when UE receives a RADIO BEARER RELEASE message. And then, the UE shall release radio access bearers according to the RADIO BEARER RELEASE message.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.3.18.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE COMPLETE before entering CELL_PCH state after it received a RADIO BEARER RELEASE message and released its radio access bearers.

8.2.3.18.4 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 RADIO BEARER RELEASE message. The UE transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC and enters into CELL_PCH state. SS calls for generic procedure C.4 to check that UE is in CELL_PCH state. ~~The SS transmits a PAGING TYPE 1 message causing the UE to enter CELL_FACH state and the UE shall transmit a CELL_UPDATE message on uplink CCCH with IE "Cell update cause" set to "paging response".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2		→	RADIO BEARER RELEASE COMPLETE	The UE sends this message before it completes state transition.
				SS waits 5 seconds to allow the UE to read system information before the next step.
3		←	PAGING TYPE 1	The SS transmits this message with a matched identity.
4		→	CELL UPDATE	The UE is in CELL_FACH state.
3		↔	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 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex-A9[TS34.108] Clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator UTRAN DRX cycle length coefficient	CELL_PCH 3
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	100

RADIO BEARER RELEASE (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex-A9[TS34.108] Clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator UTRAN DRX cycle length coefficient	CELL_PCH 3
Downlink information for each radio links - Primary CCPCH info -Cell parameters ID	4

PAGING TYPE 1 (Step 3)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Paging record list Paging record — CHOICE Used paging identity — U-RNTI — SRNC Identity — S-RNTI	UTRAN identity Previously assigned SRNC identity Previously assigned S-RNTI

CELL UPDATE (Step 4)

The contents of ~~CELL UPDATE~~ message is identical as "~~Contents of CELL UPDATE message~~" as found in Annex A with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"paging response"

8.2.3.18.5 Test requirement

After step 1 the UE transmits a RADIO BEARER RELEASE COMPLETE message on uplink DCCH using AM RLC.

~~After step 3 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "paging response".~~

<END of modified section>

<START of modified section>

8.2.3.19 Radio Bearer Release from CELL_DCH to URA_PCH: Success

8.2.3.19.1 Definition

8.2.3.19.2 Conformance requirement

The UE shall transmit a RADIO BEARER RELEASE COMPLETE message before it transits from CELL_DCH to URA_PCH when UE receives a RADIO BEARER RELEASE message. And then, the UE shall release radio access bearers according to the RADIO BEARER RELEASE message.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.3.19.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE COMPLETE before entering URA_PCH state after it received a RADIO BEARER RELEASE message and released its radio bearers.

8.2.3.19.4 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 RADIO BEARER RELEASE message. The UE transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC and enters into URA_PCH state. [SS calls for generic procedure C.5 to check that UE is in URA_PCH state.](#) ~~The SS transmits a PAGING TYPE 1 message, causing the UE to enter CELL_FACH state and the UE shall transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "paging response".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2		→	RADIO BEARER RELEASE COMPLETE	The UE sends this message before it completes state transition.
				SS waits 5 seconds to allow the UE to read system information before the next step.
3		←	PAGING TYPE 1	The SS transmits this message with a matched identity.
4		→	CELL UPDATE	The UE is in CELL_FACH state.
3		↔	CALL C.5	If the test result of C.5 indicates that UE is in URA_PCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER RELEASE (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex-A9[TS34.108] Clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator UTRAN DRX cycle length coefficient	URA_PCH 3
Downlink information for each radio link - Primary CPICH info - Primary scrambling code	100

RADIO BEARER RELEASE (Step 1) (TDD)

Information Element	Value/remark
RRC State Indicator UTRAN DRX cycle length coefficient	CELL_PCH 3
Downlink information for each radio links - Primary CCPCH info -Cell parameters ID	4

PAGING TYPE 1 (Step 3)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Paging record list Paging record CHOICE Used paging identity U-RNTI SRNC Identity S-RNTI	UTRAN identity Previously assigned SRNC identity Previously assigned S-RNTI

CELL UPDATE (Step 4)

The contents of CELL_UPDATE message is identical as "Contents of CELL_UPDATE message" as found in Annex A with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"paging response"

8.2.3.19.5 Test requirement

After step 1 the UE transmits a RADIO BEARER RELEASE COMPLETE message to the UE on uplink DCCH using AM RLC.

~~After step 3 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "paging response".~~

<END of modified section>

<START of modified section>

8.2.5.1 Transport format combination control in CELL_DCH: restriction

8.2.5.1.1 Definition

8.2.5.1.2 Conformance requirement

The UE shall change the subset of the allowed uplink transport format combination when the UE receives TRANSPORT FORMAT COMBINATION CONTROL message.

Reference

3GPP TS 25.331 clause 8.2.5.

8.2.5.1.3 Test purpose

To confirm that the UE does not transmit any data on the DCH for the ~~signalling radio bearer~~ user data radio bearer on the uplink, following the reception of TRANSPORT FORMAT COMBINATION CONTROL message sent from the SS, which is set to the value in IE "Restricted TrCH information".

8.2.5.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: DCCH+DTCH_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.

PS case:

For the PS case the reference radio bearer configuration specified in TS 34.108, clause 6.10.3.4.1.26 (Interactive or background / UL:64 DL:64 kbps / PS RAB) is used.

RLC is configured for no discard.

CS case:

For the CS case the reference radio bearer configuration specified in TS 34.108, clause 6.10.2.4.1.13 (UL:64/DL:64 kbps CS RAB, 20 ms TTI) is used.

RLC is configured for no segmentation and 'Timer based discard without explicit signalling' with Timer_discard value set to 100ms.

Test Procedure

- a. The UE is in CELL_DCH state.
- b. The SS close the UE test loop.
- c. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message using AM_RLC on the DCCH, which indicates that only TF0 is allowed on the uplink for DCH transport channel on the ~~DCCH~~DTCH.
- d. ~~The SS transmits data to the UE. a UE CAPABILITY ENQUIRY message using AM_RLC on the downlink DCCH and wait for the reception of a STATUS PDU.~~
- e. The SS waits to check that no data is returned in uplink.
- f. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message using AM_RLC on the DCCH, which enables all transport formats on the uplink for DCH transport channel on the DTCH.
- g. For the CS case the SS send data (the previous data should have been discarded by the TM RLC entity)
- h. The SS checks that the sent data is returned from the UE.

~~UE shall be restricted from transmitting the DCH carrying any data STATUS PDU and the SS does not receive the STATUS PDU data.~~

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		PAGING RESPONSE (DCCH)	RR

PS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6a	-->		SERVICE REQUEST (DCCH)	GMM
6b	<--		SECURITY MODE COMMAND	RRC see note 1
6c	-->		SECURITY MODE COMPLETE	RRC see note 1

Note 1 Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Step	Direction		Message	Comments
	UE	SS		
1			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.
2		<--	ACTIVATE RB TEST MODE (DCCH)	TC
3		-->	ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
4		<--	RADIO BEARER SETUP (DCCH)	RRC
5		-->	RADIO BEARER SETUP COMPLETE (DCCH)	RRC
6		<--	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.
7		-->	CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
8		<--	TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to TF0 (no data)
9		<--	PS case: 1 RLC SDU CS case: 2xRLC SDU	For the PS case one RLC SDU of size 312 bits is sent (payload size minus size of 7 bit length indicator and expansion bit). For the CS case two RLC SDUs of size 640 bits are sent.
10				SS waits 5 seconds to secure that no data is returned by the UE
11		<--	TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC All transport format combinations are enabled
12			CS case: 2xRLC SDU	For the CS case two RLC SDUs of size 640 bits are sent.
13		-->	PS case: 1 RLC SDU CS case: 2xRLC SDU	UE returns data
14		<--	OPEN UE TEST LOOP (DCCH)	TC
15		-->	OPEN UE TEST LOOP COMPLETE (DCCH)	TC
16			RB RELEASE (DCCH)	RRC Optional step
17		<--	DEACTIVATE RB TEST MODE (DCCH)	TC Optional step
18		-->	DEACTIVATE RB TEST MODE COMPLETE (DCCH)	TC Optional step

Step	Direction		Message	Comment
	UE	SS		
4				UE is in CELL_DCH state with a DCH for a signalling radio bearer and a DCH for a radio access bearer.
4a		⇒		SS prompts the operator to make the UE send data in the uplink. The UE sends data in the uplink on the DTCH using an appropriate transport format not equal to 0.
2		←	TRANSPORT FORMAT COMBINATION CONTROL	The SS indicates to the UE that it is restricted to use the TFS defined in Restricted TrCH information IE as the DCH is not transmitted on the uplink DCCH.
2a		←	UE CAPABILITY ENQUIRY	The SS transmits this message to make the UE send an uplink STATUS PDU response message.
2b		⇒	UE CAPABILITY INFORMATION	The UE sends the uplink response message.
2c		←	UE CAPABILITY INFORMATION CONFIRM	
2d				SS prompts the operator to make the UE send data in the uplink.
3				The UE shall not transmit any data on the uplink user data radio access bearer STATUS PDU.

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL [\(step 8\)](#)

Use the same message sub-type titled "TRANSPORT FORMAT COMBINATION CONTROL" in Annex A with following exceptions:

Information Element	Value/remark
TrCH information elements -DPCH/PUSCH TFCS uplink in uplink - Restricted TrCH information - Uplink transport channel type - Restricted UL TrCH identity - Allowed TFI	DCH 5 1 0

[TRANSPORT FORMAT COMBINATION CONTROL \(step 11\)](#)

[Use the same message sub-type titled "TRANSPORT FORMAT COMBINATION CONTROL" in Annex A with following exceptions:](#)

Information Element	Value/remark
TrCH information elements -DPCH/PUSCH TFCS uplink in uplink - Restricted TrCH information - Uplink transport channel type - Restricted UL TrCH identity - Full transport format combination set	DCH 1 Null

8.2.5.1.5 Test requirement

1. At step 10 no data shall be sent by the UE.
2. At step 13:
 - For PS case: SS shall receive one RLC SDU from the UE
 - For CS case: SS shall receive two RLC SDUs from the UE

~~After step 2a the UE shall not transmit a STATUS PDU on the uplink DCCH/DTCH with transport channel identity 1.~~

8.2.5.2 Transport format combination control in CELL_DCH: release a restriction

Implicitly tested in test case 8.2.5.1.

~~8.2.5.2.1 Definition~~

~~8.2.5.2.2 Conformance requirement~~

~~The UE shall change the subset of allowed transport format combinations of in the uplink when it receives a TRANSPORT FORMAT COMBINATION CONTROL message, specifying that an the existing TFCS restriction for the usage of TFCS beis removed.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.2.5.~~

~~8.2.5.2.3 Test purpose~~

~~To confirm that the UE transmit DTCH on the uplink user data signalling radio bearer, following the reception of a TRANSPORT FORMAT COMBINATION CONTROL message which include the IE "Full transport format combination set".~~

~~8.2.5.2.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 1 cell.~~

~~UE: DCCH+DTCH_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 CELL_DCH state. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message which indicates that only TF0 is allowed on the uplink for DCH transport channel on the DCCH/DTCH. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message which includes IE "Full transport format combination set" to remove the restriction for the uplink TFC. The SS prompts the operator to make the UE transmit on the uplink DTCH transmits a UE CAPABILITY ENQUIRY message UE and UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH. The UE transmits data on the uplink DTCH The SS transmits a UE CAPABILITY INFORMATION CONFIRM.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in CELL_DCH state with a DCH for a signalling radio bearer and a DCH for a radio access bearer.
2		←	TRANSPORT FORMAT COMBINATION CONTROL	The SS indicates to the UE that it is restricted to use the TFS defined in Restricted TrCH information IE as the DCH is not transmitted on the uplink DCCH.
3		←	TRANSPORT FORMAT COMBINATION CONTROL	The SS indicates the UE that it removes the restriction to use the TFS defined in Restricted TrCH information IE in step 2.
4		↔	UE CAPABILITY ENQUIRY	The SS transmits this message to make the UE send a response message. SS prompts the operator to make the UE send data in the uplink.
5		→	UE CAPABILITY INFORMATION	The UE sends data in the uplink using an appropriate transport format not equal to 0.
6		←	UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL (Step 2)

Use the same message sub-type titled "TRANSPORT FORMAT COMBINATION CONTROL" in Annex A with following exceptions:

Information Element	Value/remark
TrCH information elements	
→ DPCH/PUSCH TFS uplink in uplink	
→ Restricted TrCH information	
→ Uplink transport channel type	DCCH
→ Restricted UL TrCH identity	15
→ Allowed TFI	0

TRANSPORT FORMAT COMBINATION CONTROL (Step 3)

Use the same message sub-type titled "TRANSPORT FORMAT COMBINATION CONTROL" in Annex A with following exceptions:

Information Element	Value/remark
TrCH information elements	
→ DPCH/PUSCH TFS uplink in uplink	
→ Full transport format combination set	Null

8.2.5.2.5 Test requirement

After step 4 the UE shall transmit a data UE CAPABILITY INFORMATION message on the uplink DCCH DTCH with transport channel identity 1 using AM RLC.

<END of modified section>

CHANGE REQUEST

⌘ **34.123-1 CR 198** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to test cases 9.2.3 and 9.2.4		
Source:	⌘ Nortel Networks		
Work item code:	⌘ TEI	Date:	⌘ 19/05/02
Category:	⌘ F	Release:	⌘ REL-4
	<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)

Reason for change:	⌘ Clarification.		
Summary of change:	⌘ Modifications made in the conformance requirement and the expected sequence table. Corrections put directly in Nokia's T1S-020204r2.		
Consequences if not approved:	⌘		

Clauses affected:	⌘ 9.2.3 and 9.2.4		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ R99 and Rel-4		

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.

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. After the sending of this message, the SS waits for the disconnection of the main signalling link.
35	→	AUTHENTICATION RESPONSE	
36	←	LOCATION UPDATING ACCEPT	
37	→	TMSI REALLOCATION COMPLETE	
38	←	RRC CONNECTION RELEASE	
39	→	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.

9.2.2.5 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.

<Start of modified section>

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 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' 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). A UE shall correctly respond to an AUTHENTICATION REQUEST message with correct AUTN parameter by sending AUTHENTICATION RESPONSE message after identification procedure.~~

- 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 ~~invalid~~ 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'. ~~A UE shall correctly respond to an AUTHENTICATION REQUEST message with correct AUTN parameter by sending AUTHENTICATION RESPONSE message after identification procedure.~~
- 2) To ~~verify 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 ~~verify 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 ~~verify 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 ~~responded~~ 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. with the AUTN parameter having an invalid MAC code
4	→		AUTHENTICATION FAILURE	With reject cause "MAC failure"
5	←		IDENTITY REQUEST	With identity type IMSI
6	→		IDENTITY RESPONSE (IMSI)	With Type of identity IMSI in Mobile Identity IE IMSI
7	←		AUTHENTICATION REQUEST	With the AUTN parameter having a correct-valid MAC code, see 34.108 clause 8.1.2.1 step 4.
8	→		AUTHENTICATION RESPONSE	Authentication Response Parameter IE (RES) "Auth parameter RES" IE 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 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' and start the timer T3216 and stop any of the retransmission timers that are running (i.e. T3210, T3220 or T3230), and parameter (AUTS) provided by the USIM (see TS 33.102). 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. When the first AUTHENTICATION REQUEST message containing an invalid SQN 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 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' ~~and parameter (AUTS) provided by the USIM (see TS 33.102).~~
- 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.

<End of modified section>

CHANGE REQUEST

⌘ **34.123 CR 201** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of layer 2 setting for TM RBs, segmentation indication		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-18
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-4 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)

Reason for change: ⌘

- The corrections to default message included in this CR are proposed to align the test with configurations typically used in real networks
- To correct some radio bearer test cases based on commnets from ETSI MCC.

Summary of change: ⌘ Segmentation indication

- In several subclauses in TS 34.123, covering several RABs using TM RBs, segmentation indication has been changed from TRUE to FALSE. The RLC SDU sizes are adjusted accordingly. For the conversational 64 kbps RAB for example, the test specified in 14.2.13.2 applies an RLC SDU size of 2560, an RLC PDU size of 640 and hence segmentation set to TRUE. However, it is also possible to apply "no segmentation" in which case the RLC SDU size will be 640, equal to the RLC PDU size. In this case there will be multiple RLC SDUs transferred in one TTI, which is allowed for the "no segmentation" case. No segmentation is considered to be the normal case used in real network configurations.
- For TM radio bearer, having UL transport formats with more than 1 transport block, the Timer discard without explicit signalling have been configured for 100ms. If the 'Timer discard without explicit signalling' is not configured then a good UE will fail the test if, due to UE test loop function delays, not all SDUs are delivered to the uplink RLC entity within one and the same TTI.

Affected test cases are: 14.2.12, 14.2.13.1, 14.2.13.2, 14.2.14.2, 14.2.16, 14.2.17, 14.2.19, 14.2.21, 14.2.49.1, 14.2.49.2, 14.2.50.1, 14.2.50.2, 14.2.51.1, 14.2.51.2, 14.2.52.1, 14.2.52.2, 14.2.53.1 and 14.2.53.2.

TM radio bearer test case 14.2.14.1 has maximum transport format of one transport block (i.e. 0xTB and 1xTB) and does thus not to be configured for

	<p>'Timer discard without explicit signalling'.</p> <ul style="list-style-type: none"> • Correction of test requirement reflecting the changes to number of SDUs sent per TTI. • Correction of RLC SDU size and test data size for test case 14.2.51.2 (sub-test 4) • Correction of RLC SDU size for test cases 14.2.52.1 and 14.2.52.2 (Sub tests 3 and 8)
Consequences if not approved:	<p>⌘ In case the CR is not approved the test specification will</p> <ul style="list-style-type: none"> • The tests will not reflect configurations typically used in real networks
Clauses affected:	<p>⌘ 14.2.12, 14.2.13, 14.2.14, 14.2.16, 14.2.17, 14.2.18, 14.2.19, 14.2.20, 14.2.21, 14.2.22, 14.2.49, 14.2.50, 14.2.51, 14.2.52, 14.2.53</p>
Other specs affected:	<p>⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/></p> <p><input type="checkbox"/> Test specifications</p> <p><input type="checkbox"/> O&M Specifications</p>
Other comments:	<p>⌘ Applicable to R99 and REL-4.</p> <p>According to the decision in T1/SIG#22 the changes to RLC settings in Annex A.1 have been moved to a separate CR.</p>

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of modified section>

14.2.12 Conversational / unknown / UL:28.8 DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.12.1 Conformance requirement

See 14.2.4.1.

14.2.12.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.12.

14.2.12.3 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 TRUEFALSE
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
NOTE: 'Timer based discard without explicit signalling' is configured in uplink to secure that the UE will be able to return data in uplink for the case when the UE test loop function, due to processing delays, will not deliver the SDUs in one and the same TTI, but instead in two subsequent TTIs.	

Uplink TFS:

	TFI	RB5 (28.8 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	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:

		RB5 (28.8 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	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 TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 576	RB5: 576
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5,	RB5: <u>4452576</u>	RB5: <u>44522x576</u>

NOTE: 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.

14.2.12.4 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 (1x576).
 - for sub-test 2: RB5/TF2 (2x576).
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 SS.
 - for sub-test 2: two RLC SDUs on RB5 having the same content as sent by SS.

14.2.13 Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.13.1 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 20 ms TTI

14.2.13.1.1 Conformance requirement

See clause 14.2.4.1.

14.2.13.1.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.13 for the 20 ms TTI case.

14.2.13.1.3 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 TRUEFALSE
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	2x640	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	0x640	0x148
	TF1, bits	2x640	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	Implicitly tested	Restricted UL TFCs	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: 4280 640	RB5: 4280 2x640
NOTE: 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.

14.2.13.1.4 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 (2x640).
3. At step 15 the UE shall return
 - for sub-test 1: ~~antwo~~ RLC SDUs on RB5 having the same content as sent by SS.

14.2.13.2 Conversational / unknown / UL:64 DL:64 kbps / CS RAB / 40 ms TTI

14.2.13.2.1 Conformance requirement

See clause 14.2.4.1.

14.2.13.2.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.13 for the 40 ms TTI case.

14.2.13.2.3 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 TRUEFALSE
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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 (64 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	4x640	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	0x640	0x148
	TF1, bits	4x640	1x148

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF0, TF1)
DL_TFC3	(TF1, TF1)

Sub-tests:

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	UL_TFC1	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: <u>2560640</u>	RB5: <u>25604x640</u>
NOTE: 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.

14.2.13.2.4 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 (4x640).
3. At step 15 the UE shall return
 - for sub-test 1: **anfour** RLC SDUs on RB5 having the same content as sent by SS.

14.2.14 Conversational / unknown / UL:32 DL:32 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.14.1 Conversational / unknown / UL:32 DL:32 kbps / CS RAB / 20 ms TTI

14.2.14.1.1 Conformance requirement

See 14.2.4.1.

14.2.14.1.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.14 for the 20 ms TTI case.

14.2.14.1.3 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:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	1x640	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 (32 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	1x640	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 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: 640	RB5: 640
NOTE: 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.

14.2.14.1.4 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.

14.2.14.2 Conversational / unknown / UL:32 DL:32 kbps / CS RAB / 40 ms TTI

14.2.14.2.1 Conformance requirement

See 14.2.4.1.

14.2.14.2.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.14 for the 40 ms TTI case.

14.2.14.2.3 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	100ms
Segmentation indication	TRUEFALSE
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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 (32 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	2x640	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 (32 kbps)	DCCH
TFS	TF0, bits	0x640	0x148
	TF1, bits	2x640	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	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: 4280640	RB5: 42802x640
NOTE: 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.

14.2.14.2.4 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 (2x640).
3. At step 15 the UE shall return
 - for sub-test 1: **antwo** RLC SDUs on RB5 having the same content as sent by SS.

<End of modified section>

<Start of modified section>

14.2.16 Streaming / unknown / UL:28.8/DL:28.8 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.16.1 Conformance requirement

See 14.2.4.1.

14.2.16.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.16.

14.2.16.3 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	100ms
Segmentation indication	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 (28.8 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	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:

		RB5 (28.8 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	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 TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 576	RB5: 576
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5,	RB5: 1152576	RB5: 11522x576
NOTE: 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.

14.2.16.4 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 (1x576).
 - for sub-test 2: RB5/TF2 (2x576).
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 SS.
 - for sub-test 2: two RLC SDU on RB5 having the same content as sent by SS.

14.2.17 Streaming / unknown / UL:57.6/DL:57.6 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.17.1 Conformance requirement

See 14.2.4.1.

14.2.17.2 Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.17.

14.2.17.3 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:

	TFI	RB5 (57.6 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	N/A
	TF3, bits	3x576	N/A
	TF4, bits	4x576	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 (57.6 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	1x148
	TF2, bits	2x576	N/A
	TF3, bits	3x576	N/A
	TF4, bits	4x576	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5,	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 576	RB5: 576
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 4452576	RB5: 44522x576
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 4728576	RB5: 47283x576
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2304576	RB5: 23044x576

NOTE: 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.

14.2.17.4 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 (1x576).
 - for sub-test 2: RB5/TF2 (2x576).
 - for sub-test 3: RB5/TF3 (3x576).
 - for sub-test 4: RB5/TF4 (4x576).
3. At step 15 the UE shall return
 - for sub-test 1 ~~to 4: anone~~ 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.

14.2.18 Streaming / unknown / UL:0 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.18.1 Conformance requirement

See 14.2.4.1.

14.2.18.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.18.

To be able to test the downlink radio bearer using the UE loopback function for the reference radio bearer UL:0 DL: 64 kbps, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.1.15.1 (Streaming/unknown/UL:14.4 kbps) is used in uplink.

14.2.18.3 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:

	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 (64 kbps)	DCCH
TFS	TF0, bits	0x320	0x148
	TF1, bits	1x320	1x148
	TF2, bits	2x320	N/A
	TF3, bits	4x320	N/A
	TF4, bits	8x320	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	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 320 (note 2)
2	DL_TFC2	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 640x320 (note 3)
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 1280x320 (note 4)
4	DL_TFC4	UL_TFC1	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 2560x320 (note 5)

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
 NOTE 2: SS is using a DL RLC SDU with 320 bits as test data (=DL RLC PDU size for DL/TF1). UE will return one RLC PDU. SS creates an UL RLC SDU from the first 320 bits of the received RLC PDU.
 NOTE 3: SS is using a DL RLC SDU size of 640 bits as test data (=DL RLC PDU size for DL/TF2). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.
 NOTE 4: SS is using a DL RLC SDU size of 1280 bits as test data (=DL RLC PDU size for DL/TF3). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.
 NOTE 5: SS is using a DL RLC SDU size of 2560 bits as test data (=DL RLC PDU size for DL/TF4). UE will return one RLC PDU. SS creates an UL RLC SDU.

See 14.1.1 for test procedure.

14.2.18.4 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 shall return

- for sub-test 1: an RLC SDU on RB5 where the first 320 bits have the same content as the RLC SDU having the same content as sent by the SS.
- for sub-test 2 to 4: one or more RLC SDUs on RB5 where the first 320 bits have the same content as the RLC SDU having the same content as the first 576 bits of the RLC SDU sent by the SS.

14.2.19 Streaming / unknown / UL:64 DL:0 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.19.1 Conformance requirement

See 14.2.4.1.

14.2.19.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.19.

To be able to test the uplink radio bearer using the UE loopback function for the reference radio bearer UL:64 DL: 0 kbps, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.1.15.2 (Streaming/unknown/DL:14.4 kbps) is used in downlink.

14.2.19.3 Method of test

Initial Conditions

The following RLC Info parameter values shall be set by the SS:

Uplink RLC TM RLC Segmentation indication	TRUE
Downlink RLC TM RLC Segmentation indication	TRUE

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x320	0x148
	TF1, bits	1x320	1x148
	TF2, bits	2x320	N/A
	TF3, bits	4x320	N/A
	TF4, bits	8x320	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 (14.4 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	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	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 320	RB5: 576 (note 2)
2	DL_TFC1	UL_TFC2	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 640	RB5: 576 (note 3)
3	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1280	RB5: 576 (note 4)
4	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2560	RB5: 576 (note 5)

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
NOTE 2: SS is using a DL RLC SDU with 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return the first 320 bits of the test data.
NOTE 3: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU two times (truncating the last one to fit the UL RLC SDU size of 640 bits).
NOTE 4: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU three times (truncating the last one to fit the UL RLC SDU size of 1280 bits).
NOTE 5: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU five times (truncating the last one to fit the UL RLC SDU size of 2560 bits).

See 14.1.1 for test procedure.

14.2.19.4 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 (1x320).
 - for sub-test 2: RB5/TF2 (2x320).

- for sub-test 3: RB5/TF3 (4x320).
- for sub-test 4: RB5/TF4 (8x320).

3. At step 15 the UE shall return

- for sub-test 1: an RLC SDU on RB5 having the same content as the first 320 bits of the DL RLC SDU sent by the SS.
- for sub-test 2: an RLC SDU on RB5 for which the first 576 bits are equal to the sent DL RLC SDU bit pattern and the remaining 64 bits are equal to the first 64 bits of the sent DL RLC SDU.
- for sub-test 3: an RLC SDU on RB5 for which the first 1152 bits are equal to the sent DL RLC SDU bit pattern repeated twice and the remaining 128 bits are equal to the first 128 bits of the sent DL RLC SDU.
- for sub-test 4: an RLC SDU on RB5 for which the first 2304 bits are equal to the sent DL RLC SDU bit pattern repeated four times and the remaining 256 bits are equal to the first 256 of the sent DL RLC SDU.

14.2.20 Streaming / unknown / UL:0 DL:128 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.20.1 Conformance requirement

See 14.2.4.1.

14.2.20.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.20.

To be able to test the downlink radio bearer using the UE loopback function for the reference radio bearer UL:0 DL:128 kbps, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.1.15.1 (Streaming/unknown/UL:14.4 kbps) is used in uplink. For all sub-tests UL_TFC1 is used.

14.2.20.3 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	100ms
Segmentation indication	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 (28.8 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 (128 kbps)	DCCH
TFS	TF0, bits	0x320	0x148
	TF1, bits	1x320	1x148
	TF2, bits	2x320	N/A
	TF3, bits	4x320	N/A
	TF4, bits	8x320	N/A
	TF5, bits	16x320	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	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_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 320 (note 2)
2	DL_TFC2	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 6402x320 (note 3)
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 12804x320 (note 4)
4	DL_TFC4	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 25608x320 (note 5)
5	DL_TFC5	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 512016x320 (note 6)

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
 NOTE 2: SS is using a DL RLC SDU with 320 bits as test data (=DL RLC PDU size for DL/TF1). UE will return one RLC PDU. SS creates an UL RLC SDU from the first 320 bits of the received RLC PDU.
 NOTE 3: SS is using a DL RLC SDU size of 640 bits as test data (=DL RLC PDU size for DL/TF2). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.
 NOTE 4: SS is using a DL RLC SDU size of 1280 bits as test data (=DL RLC PDU size for DL/TF3). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.
 NOTE 5: SS is using a DL RLC SDU size of 2560 bits as test data (=DL RLC PDU size for DL/TF4). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.
 NOTE 6: SS is using a DL RLC SDU size of 5120 bits as test data (=DL RLC PDU size for DL/TF5). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

See 14.1.1 for test procedure.

14.2.20.4 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 shall return

- for sub-test 1: an RLC SDU on RB5 where the first 320 bits have the same content as the RLC SDU having the same content as sent by the SS.
- for sub-test 2 to 5: one or more an RLC SDUs on RB5 where the first 320 bits have the same content as the RLC SDU having the same content as the first 576 bits of the RLC SDU sent by the SS.

14.2.21 Streaming / unknown / UL:128 DL:0 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.21.1 Conformance requirement

See 14.2.4.1.

14.2.21.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.21.

To be able to test the uplink radio bearer using the UE loopback function for the reference radio bearer UL:64 DL: 0 kbps, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.1.15.2 (Streaming/unknown/DL:14.4 kbps) is used in downlink.

14.2.21.3 Method of test

Initial Conditions

The following RLC Info parameter values shall be set by the SS:

Uplink RLC TM RLC Segmentation indication	TRUE
Downlink RLC TM RLC Segmentation indication	TRUE

Uplink TFS:

	TFI	RB5 (128 kbps)	DCCH
TFS	TF0, bits	0x320	0x148
	TF1, bits	1x320	1x148
	TF2, bits	2x320	N/A
	TF3, bits	4x320	N/A
	TF4, bits	8x320	N/A
	TF5, bits	16x320	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	(TF4, 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 (28.8 kbps)	DCCH
TFS	TF0, bits	0x576	0x148
	TF1, bits	1x576	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 TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 320	RB5: 576 (note 2)
2	DL_TFC1	UL_TFC2	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 640	RB5: 576 (note 3)
3	DL_TFC1	UL_TFC3	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1280	RB5: 576 (note 4)
4	DL_TFC1	UL_TFC4	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 2560	RB5: 576 (note 5)
5	DL_TFC1	UL_TFC5	DL_TFC0, DL_TFC2, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 5120	RB5: 576 (note 6)

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
 NOTE 2: SS is using a DL RLC SDU with 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return the first 320 bits of the test data.
 NOTE 3: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU two times (truncating the last one to fit the UL RLC SDU size of 640 bits).
 NOTE 4: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU three times (truncating the last one to fit the UL RLC SDU size of 1280 bits).
 NOTE 5: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU five times (truncating the last one to fit the UL RLC SDU size of 2560 bits).
 NOTE 6: SS is using a DL RLC SDU size of 576 bits as test data (=DL RLC PDU size for DL/TF1). UE will return an RLC SDU repeating the received DL RLC SDU nine times (truncating the last one to fit the UL RLC SDU size of 5120 bits).

See 14.1.1 for test procedure.

14.2.21.4 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 (1x320).
 - for sub-test 2: RB5/TF2 (2x320).
 - for sub-test 3: RB5/TF3 (4x320).
 - for sub-test 4: RB5/TF4 (8x320).

- for sub-test 5: RB5/TF5 (16x320).
3. At step 15 the UE shall return
- for sub-test 1: an RLC SDU on RB5 having the same content as the first 320 bits of the DL RLC SDU sent by the SS.
 - for sub-test 2: an RLC SDU on RB5 for which the first 576 bits are equal to the sent DL RLC SDU bit pattern and the remaining 64 bits are equal to the first 64 bits of the DL RLC SDU sent by the SS.
 - for sub-test 3: an RLC SDU on RB5 for which the first 1152 bits are equal to the sent DL RLC SDU bit pattern repeated twice and the remaining 128 bits are equal to the first 128 of the sent DL RLC SDU.
 - for sub-test 4: an RLC SDU on RB5 for which the first 2304 bits are equal to the sent DL RLC SDU bit pattern repeated four times and the remaining 256 bits are equal to the first 256 of the sent DL RLC SDU.
 - for sub-test 5: an RLC SDU on RB5 for which the first 4608 bits are equal to the sent DL RLC SDU bit pattern repeated eight times and the remaining 512 bits are equal to the first 512 of the sent DL RLC SDU.

14.2.22 Streaming / unknown / UL:0 DL:384 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.22.1 Conformance requirement

See 14.2.4.1.

14.2.22.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.22.

To be able to test the downlink radio bearer using the UE loopback function for the reference radio bearer UL:0 DL:384 kbps, the reference radio bearer configuration according to TS 34.108, clause 6.10.2.4.1.15.1 (Streaming/unknown/UL:14.4 kbps) is used in uplink.

14.2.22.3 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	100ms
Segmentation indication	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 TTL.	

Uplink TFS:

	TFI	RB5 (28.8 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 (384 kbps)	DCCH
TFS	TF0, bits	0x320	0x148
	TF1, bits	1x320	1x148
	TF2, bits	2x320	N/A
	TF3, bits	4x320	N/A
	TF4, bits	8x320	N/A
	TF5, bits	16x320	N/A
	TF6, bits	32x320	N/A
	TF7, bits	48x320	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	(TF0, TF1)
DL_TFC9	(TF1, TF1)
DL_TFC10	(TF2, TF1)
DL_TFC11	(TF3, TF1)
DL_TFC12	(TF4, TF1)
DL_TFC13	(TF5, TF1)
DL_TFC14	(TF6, TF1)
DL_TFC15	(TF7, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 320 (note 2)
2	DL_TFC2	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 640x320 (note 3)

Sub-test	Downlink TFCs Under test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
3	DL_TFC3	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2,	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 12804x320 (note 4)
4	DL_TFC4	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 25608x320 (note 5)
5	DL_TFC5	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 512016x320 (note 6)
6	DL_TFC6	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 1024032x320 (note 7)
7	DL_TFC7	UL_TFC1	DL_TFC0, DL_TFC8, UL_TFC0, UL_TFC2	UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3	RB5: 576	RB5: 1536048x320 (note 8)

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.

NOTE 2: SS is using a DL RLC SDU with 320 bits as test data (=DL RLC PDU size for DL/TF1). UE will return one RLC PDU. SS creates an UL RLC SDU from the first 320 bits of the received RLC PDU.

NOTE 3: SS is using a DL RLC SDU size of 640 bits as test data (=DL RLC PDU size for DL/TF2). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

NOTE 4: SS is using a DL RLC SDU size of 1280 bits as test data (=DL RLC PDU size for DL/TF3). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

NOTE 5: SS is using a DL RLC SDU size of 2560 bits as test data (=DL RLC PDU size for DL/TF4). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

NOTE 6: SS is using a DL RLC SDU size of 5120 bits as test data (=DL RLC PDU size for DL/TF5). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

NOTE 7: SS is using a DL RLC SDU size of 10240 bits as test data (=DL RLC PDU size for DL/TF6). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

NOTE 8: SS is using a DL RLC SDU size of 15360 bits as test data (=DL RLC PDU size for DL/TF7). UE will return one RLC PDU. SS creates an UL RLC SDU from the received RLC PDU.

See 14.1.1 for test procedure.

14.2.22.4 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 shall return

- for sub-test 1: an RLC SDU on RB5 ~~where the first 320 bits have the same content as the RLC SDU having the same content as~~ sent by the SS.
- for sub-test 2 to 7: ~~an one or more RLC SDUs~~ on RB5 ~~where the first 320 bits have the same content as the RLC SDU having the same content as the first 576 bits of the RLC SDU~~ sent by the SS.

<End of modified section>

<Start of next modified section>

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

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 SDU Discard Mode Timer based no explicit Timer discard Segmentation indication	100ms TRUEFALSE
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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	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)	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 TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 1280 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 1280 640	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 1280 640	RB5: No data RB6: No data RB7: No data RB8: 1280 2x640
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 1280 640	RB5: 39 RB6: No data RB7: No data RB8: 1280 2x640
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 1280 640	RB5: 81 RB6: 103 RB7: 60 RB8: 1280 2x640
NOTE: 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 14.1.1 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).
 - for sub-test 3: RB8/TF1 (2x640)
 - for sub-test 4: RB5/TF1 (1x39) and RB8/TF1 (2x640).
 - for sub-test 5: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF1 (2x640).
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: **antwo** 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 **two 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 **two RLC SDUs on** RB8 having the same content as sent by SS.

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 SDU Discard Mode Timer based no explicit Timer_discard	TRUE FALSE 100ms
Downlink RLC TM RLC Segmentation indication	TRUE 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	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 39 RB6: 103 RB7: 60 RB8: 2560 640	RB5: 39 RB6: No data RB7: No data RB8: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 81 RB6: 103 RB7: 60 RB8: 640 2560	RB5: 81 RB6: 103 RB7: 60 RB8: No data
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 39 RB6: 103 RB7: 60 RB8: 640 2560	RB5: No data RB6: No data RB7: No data RB8: 4x640 2560
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 39 RB6: 103 RB7: 60 RB8: 640 2560	RB5: 39 RB6: No data RB7: No data RB8: 4x640 2560
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 81 RB6: 103 RB7: 60 RB8: 640 2560	RB5: 81 RB6: 103 RB7: 60 RB8: 4x640 2560

NOTE: 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.

14.2.49.2.4 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 (1x39).
 - for sub-test 2: RB5/TF2 (1x81); RB6/TF1 (1x103); and RB7/TF1 (1x60).

- for sub-test 3: RB8/TF1 (4x640)
- for sub-test 4: RB5/TF1 (1x39) and RB8/TF1 (2x640).
- for sub-test 5: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF1 (4x640).

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~~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.

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	TRUEFAL SE	TRUEFAL SE
Transmission RLC discard CHOICE SDU Discard Mode Timer based no explicit Timer discard	100ms	100ms
Downlink RLC TM RLC Segmentation indication	TRUEFAL SE	TRUEFAL SE
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 (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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5	RB5: 1280 640 RB6: 6404280	RB5: 2x640 1280 RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 1280 RB6: 6404280	RB5: No data RB6: 2x6404280
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC7	RB5: 6404280 RB6: 6404280	RB5: 2x6404280 RB6: 2x6404280

NOTE: 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.

14.2.50.1.4 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 (2x640).
 - for sub-test 2: RB6/TF1 (2x640).
 - for sub-test 3: RB5/TF1 (2x640); RB6/TF1 (2x640)
- At step 15 the UE shall return
 - for sub-test 1: **antwo** RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 2: **antwo** RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 3: **antwo** RLC SDUs on RB5 and RB6 having the same content as sent by SS.

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	TRUE FAL SE	TRUE FAL SE
Transmission RLC discard CHOICE SDU Discard Mode Timer based no explicit Timer discard	100ms	100ms
Downlink RLC TM RLC Segmentation indication	TRUE FAL SE	TRUE FAL SE
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 (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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC1, UL_TFC4, UL_TFC5	RB5: 2560 640 RB6: 640 2560	RB5: 4x640 2560 RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC2, UL_TFC4, UL_TFC6	RB5: 640 2560 RB6: 640 2560	RB5: No data RB6: 4x640 2560
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC4, UL_TFC0, UL_TFC4	UL_TFC0, UL_TFC3, UL_TFC4, UL_TFC7	RB5: 640 2560 RB6: 640 2560	RB5: 4x640 2560 RB6: 4x640 2560

NOTE: 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.

14.2.50.2.4 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 (4x640).
 - for sub-test 2: RB6/TF1 (4x640).
 - for sub-test 3: RB5/TF1 (4x640); RB6/TF1 (4x640)
3. At step 15 the UE shall return
 - for sub-test 1: **anfour** RLC SDUs on RB5 having the same content as sent by SS; and no data shall be received on RB6.
 - for sub-test 2: **anfour** RLC SDUs on RB6 having the same content as sent by SS; and no data shall be received on RB5.
 - for sub-test 3: **anfour** RLC SDUs on RB5 and RB6 having the same content as sent by SS.

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

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		TRUEFALS
Transmission RLC discard		E
CHOICE SDU Discard Mode		
Timer based no explicit		
Timer discard		100ms
Downlink RLC		
TM RLC		
Segmentation indication		TRUEFALS
		E
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)	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 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

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	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 6404280 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 6404280 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 6404280 RB6: 952	RB5: No data RB6: 952
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 6404280 RB6: 1272	RB5: No data RB6: 1272
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 6404280 RB6: 312	RB5: 42802x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 6404280 RB6: 312	RB5: 42802x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 6404280 RB6: 632	RB5: 42802x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 6404280 RB6: 952	RB5: 42802x640 RB6: 952
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 6404280 RB6: 1272	RB5: 42802x640 RB6: 1272

NOTE: 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.

14.2.51.1.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (3x336).
 - for sub-test 4 and 9: RB6/TF1 (4x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (2x640)
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: **antwo** 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: **antwo** RLC SDUs on RB5 and **one RLC SDU on** RB6 having the same content as sent by SS.

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		TRUEFALS
Transmission RLC discard		E
CHOICE SDU Discard Mode		
Timer based no explicit		
Timer discard		100ms
Downlink RLC		
TM RLC		
Segmentation indication		TRUEFALS
		E
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)	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 2560 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 2560 640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 2560 640 RB6: 952	RB5: No data RB6: 952
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 2560 640 RB6: 13441272	RB5: No data RB6: 13441272
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 2560 640 RB6: 632	RB5: 2560 4x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 2560 640 RB6: 952	RB5: 2560 4x640 RB6: 952
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 2560 640 RB6: 1272	RB5: 2560 4x640 RB6: 1272
NOTE: 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.

14.2.51.2.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (3x336).
 - for sub-test 4 and 9: RB6/TF1 (4x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (4x640)

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: **antwo** 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: **antwo** RLC SDUs on RB5 and **one RLC SDU on** RB6 having the same content as sent by SS.

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.

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.

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.

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.

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 SDU Discard Mode Timer based no explicit Timer discard	TRUEFALSE 100ms
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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)	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 4280640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 4280640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 4280640 RB6: 42721912	RB5: No data RB6: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 4280640 RB6: 2552	RB5: No data RB6: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 4280640 RB6: 312	RB5: 42802x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 4280640 RB6: 312	RB5: 42802x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 4280640 RB6: 632	RB5: 42802x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 4280640 RB6: 42721912	RB5: 42802x640 RB6: 1272
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC19	RB5: 4280640 RB6: 2552	RB5: 42802x640 RB6: 2552
NOTE: 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.

14.2.52.1.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (3x336).
 - for sub-test 4 and 9: RB6/TF1 (4x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (2x640)

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: **antwo** 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: **antwo** RLC SDUs on RB5 and **one RLC SDU on** RB6 having the same content as sent by SS.

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 SDU Discard Mode Timer based no explicit Timer discard	TRUEFALSE 100ms
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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)	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 TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 2560 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 2560 640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 2560 640 RB6: 1272 1912	RB5: No data RB6: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 2560 640 RB6: 2552	RB5: No data RB6: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 2560 640 RB6: 632	RB5: 2560 4x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 2560 640 RB6: 1272 1912	RB5: 2560 4x640 RB6: 1272
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 2560 640 RB6: 2552	RB5: 2560 4x640 RB6: 2552

NOTE: 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.

14.2.52.2.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (3x336).
 - for sub-test 4 and 9: RB6/TF1 (4x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (4x640)
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: **anfour** 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: **anfour** RLC SDUs on RB5 and **one RLC SDU on** RB6 having the same content as sent by SS.

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 SDU Discard Mode Timer based no explicit Timer discard	TRUEFALSE 100ms
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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)	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)
DL_TFC15	(TF1, TF0, TF1)
DL_TFC16	(TF1, TF1, TF1)
DL_TFC17	(TF1, TF2, TF1)
DL_TFC18	(TF1, TF3, TF1)
DL_TFC19	(TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCs Under Test	Uplink TFCs Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 4280 640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 4280 640 RB6: 1272	RB5: No data RB6: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 4280 640 RB6: 2552	RB5: No data RB6: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 4280 640 RB6: 312	RB5: 4280 2x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 4280 640 RB6: 312	RB5: 4280 2x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 4280 640 RB6: 632	RB5: 4280 2x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 4280 640 RB6: 1272	RB5: 4280 2x640 RB6: 1272
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 4280 640 RB6: 2552	RB5: 4280 2x640 RB6: 2552
NOTE: 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.

14.2.53.1.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (4x336).
 - for sub-test 4 and 9: RB6/TF1 (8x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (2x640)
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: **antwo** 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: **antwo** RLC SDUs on RB5 and **one RLC SDU on** RB6 having the same content as sent by SS.

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 SDU Discard Mode Timer based no explicit Timer discard	TRUEFALSE 100ms
Downlink RLC TM RLC Segmentation indication	TRUEFALSE
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)	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC1, UL_TFC10, UL_TFC11	RB5: 2560 640 RB6: 312	RB5: No data RB6: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC2, UL_TFC10, UL_TFC12	RB5: 2560 640 RB6: 632	RB5: No data RB6: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC3, UL_TFC10, UL_TFC13	RB5: 2560 640 RB6: 1272	RB5: No data RB6: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC4, UL_TFC10, UL_TFC14	RB5: 2560 640 RB6: 2552	RB5: No data RB6: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC5, UL_TFC10, UL_TFC15	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: No data
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC6, UL_TFC10, UL_TFC16	RB5: 2560 640 RB6: 312	RB5: 2560 4x640 RB6: 312
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC7, UL_TFC10, UL_TFC17	RB5: 2560 640 RB6: 632	RB5: 2560 4x640 RB6: 632
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC8, UL_TFC10, UL_TFC18	RB5: 2560 4x640 RB6: 1272	RB5: 2560 4x640 RB6: 1272
9	DL_TFC9	UL_TFC9	DL_TFC0, DL_TFC10, UL_TFC0, UL_TFC10	UL_TFC0, UL_TFC9, UL_TFC10, UL_TFC19	RB5: 2560 640 RB6: 2552	RB5: 2560 4x640 RB6: 2552
NOTE: 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.

14.2.53.2.4 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 and 6: RB6/TF1 (1x336).
 - for sub-test 2 and 7: RB6/TF1 (2x336).
 - for sub-test 3 and 8: RB6/TF1 (4x336).
 - for sub-test 4 and 9: RB6/TF1 (8x336).
 - for sub-test 5, 6, 7, 8 and 9: RB5/TF1 (4x640)

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: anfour 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: anfour RLC SDUs on RB5 and one RLC SDU on RB6 having the same content as sent by SS.

<End of modified section>

CHANGE REQUEST

⌘ **TS 34.123-1 CR 202** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Update of radio bearer test cases 14.2.39.x and 14.2.40 (introducing new RB test method)

Source: ⌘ Ericsson

Work item code: ⌘ TEI

Date: ⌘ 2002-03-28

Category: ⌘ **F**

Use one of the following categories:

- F** (correction)
- A** (corresponds to a correction in an earlier release)
- B** (addition of feature),
- C** (functional modification of feature)
- D** (editorial modification)

Detailed explanations of the above categories can be found in 3GPP [TR 21.900](#).

Release: ⌘ REL-4

Use one of the following releases:

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

Reason for change: ⌘ Current test method of radio bearers does not cope with testing of TFCIs for simultaneous transmission of multiple radio bearers nor simultaneous signalling and user data.

Summary of change: ⌘

1. Changed title of 14.1.1 to “Generic radio bearer test procedure for single RB configurations” and added clarification of the scope of the procedure
2. Added new test procedure 14.1.2 “Generic test procedure for testing multi-RB combinations and simultaneous signalling”
3. Updated following test cases according to the new test procedure:
 - 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)
 - 14.2.39.2 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)
 - 14.2.39.3 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) (implicitly as based on 14.2.39.1)
 - 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) (implicitly as based on 14.2.39.2)
 - 14.2.40 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:64 kbps / PS RAB

4. Updates performed on each test case to adopt to the new test procedure:
 - Changed reference to test procedure to 14.1.2.
 - Updated column “Downlink TFCS under test” and “Uplink TFCS under test” to also include the complementary TFC with simultaneous data and signalling.
 - Updated column “Restricted UL TFCIs” in sub-test table to include all possible TFCIs that could happen in the test case taking into account TTIs of different radio bearers and UE test loop delay.
 - Updated column “UL RLC SDU size” to adopt to the datarate between DL and UL for each sub-test.
 - Updated test requirement according to new test procedure.
5. Selection of test data size and UL RLC SDU size clarified in note to sub-test tables.

Consequences if not approved: ⌘ Limited TFC test coverage for multiple radio bearer configurations.

Clauses affected: ⌘ 14.1.1, 14.1.2, 14.2.39, 14.2.40

Other specs Affected: ⌘ Other core specifications ⌘ Test specifications
 O&M Specifications

Other comments: ⌘ Affects R99 and REL4

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of modified section>

14 Interoperability Radio Bearer Tests

14.1 General information for interoperability radio bearer tests

The purpose of the interoperability radio bearer test cases are to ensure interoperability of UE's in different regions and networks. For this purpose representative radio bearer configurations that will be used in real network implementations have been defined in TS 34.108 [9], clause 6.10.

The applicability of radio bearer tests is dependent on the UE uplink and downlink radio access capabilities and UE support tele- and bearer-services. See TS 34.123-2, annex B for applicability of the specific test cases.

14.1.1 Generic radio bearer test procedure [for single RB configurations](#)

[This procedure is used to test single radio bearer configurations and speech only radio bearers. For testing of multiple radio bearer combinations as well as for testing simultaneous transmission and reception of user data and signalling data then the procedure as specified in 14.1.2 should be used.](#)

Initial conditions

UE in idle mode

Test procedure

- a) The SS ~~establish~~^{setup} the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test.
- b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. See note 1.
- c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test.
- d) The SS transmits, for all radio bearers under test, one or more RLC SDUs having the size equal to the "Test data size" as specified for the sub-test of the actual radio bearer test. See note 2.
- e) The SS checks that, for all radio bearers under test, the content of the received RLC SDU has the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.
- f) The SS opens the UE test loop.
- g) Steps b) to f) are repeated for all sub-tests
- h) The SS may optionally release the radio bearer.
- i) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The restricted set of TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration.

NOTE 2: 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.

Expected sequence

CS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (CS domain, TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6	-->		PAGING RESPONSE (DCCH)	RR

PS paging procedure

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION (BCCH)	Broadcast
2	<--		PAGING TYPE 1 (PCCH)	Paging (PS domain, P-TMSI)
3	-->		RRC CONNECTION REQUEST (CCCH)	RRC
4	<--		RRC CONNECTION SETUP (CCCH)	RRC
5	-->		RRC CONNECTION SETUP COMPLETE (DCCH)	RRC
6a	-->		SERVICE REQUEST (DCCH)	GMM
6b	<--		SECURITY MODE COMMAND	RRC see note 1
6c	-->		SECURITY MODE COMPLETE	RRC see note 1

Note 1 Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Step	Direction		Message	Comments
	UE	SS		
1..6	<-- -->		Paging	Use the CS paging procedure for testing of CS and combined CS/PS reference radio bearer configurations. Use the PS paging procedure for testing of PS reference radio bearer configurations.
7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
9	<--		RADIO BEARER SETUP (DCCH)	RRC
10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14	<--		DOWNLINK RLC SDU	Send test data using the downlink transport format combination under test
15	-->		UPLINK RLC SDU	
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE	TC Optional step

14.1.2 Generic test procedure for testing multi-RB combinations and simultaneous signalling

This procedure is used to test multiple radio bearer combinations. This procedure is also used to verify simultaneous transmission and reception of user data and signalling data.

Initial conditions

UE in idle mode

Test procedure

- a) The SS establish the reference radio bearer configuration as specified in TS 34.108, clause 6.10 for the actual radio bearer test.
- b) The SS limits the UE allowed uplink transport format combinations according to the "Restricted UL TFCIs", as specified for the sub-test of the actual radio bearer test, using the RRC transport format combination control procedure. See note 1.
- c) The SS closes the test loop using UE test loop mode 1 and setting the UL RLC SDU size parameter, for all radio bearers under test, according to the "UL RLC SDU size" value as specified for the sub-test of the actual radio bearer test.

- d) The SS starts transmitting continuous test data for all radio bearers under test. The number of RLC SDUs to transmit every TTI and the size "Test data size" is specified for each sub-test of the actual radio bearer test. See note 2.
- e) The SS waits the time T1 equal to 12 times the largest TTI. See Note 3
- f) SS transmit a MEASUREMENT CONTROL message requesting periodic reporting with a period of T2.
- g) SS waits the time equal to 2 times T2
- h) During step e) to g) the SS checks that, for all radio bearers under test, the content of the received RLC SDUs have the correct content and is received having the correct transport format. See TS 34.109 [10] clause 5.3.2.6.2 for details regarding the UE loopback of RLC SDUs.
- i) The SS opens the UE test loop.
- j) Steps b) to i) are repeated for all sub-tests
- h) The SS may optionally release the radio bearer.
- i) The SS may optionally deactivate the radio bearer test mode.

NOTE 1: The restricted set of TFCIs shall contain all possible TFCI that could happen in a sub-test. The actual TTI of the different radio bearers and signaling radio bearers as well as the possible UE processing delays shall be taken into consideration.

NOTE 2: 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.

NOTE 3: [10] TS 34.109 clause 5.3.2.9 defines the loopback delay requirement for UE test loop mode 1 to be max 10 times actual TTI of a radio bearer when RLC and MAC is operated in transparent mode. As RLC/MAC may be operated in non-transparent modes depending on the actual reference radio bearer configuration to be tested an additional 2 TTI have been added to secure that UE starts transmitting data in uplink before SS transmit the MEASUREMENT CONTROL message.

Expected sequence

CS paging procedure

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comments</u>
	<u>UE</u>	<u>SS</u>		
<u>1</u>	<u><--</u>		<u>SYSTEM INFORMATION (BCCH)</u>	<u>Broadcast</u>
<u>2</u>	<u><--</u>		<u>PAGING TYPE 1 (PCCH)</u>	<u>Paging (CS domain, TMSI)</u>
<u>3</u>		<u>--></u>	<u>RRC CONNECTION REQUEST (CCCH)</u>	<u>RRC</u>
<u>4</u>	<u><--</u>		<u>RRC CONNECTION SETUP (CCCH)</u>	<u>RRC</u>
<u>5</u>		<u>--></u>	<u>RRC CONNECTION SETUP COMPLETE (DCCH)</u>	<u>RRC</u>
<u>6</u>		<u>--></u>	<u>PAGING RESPONSE (DCCH)</u>	<u>RR</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 Step 6b and Step 6c are inserted in order to stop T3317 timer in the UE, which starts after transmitting SERVICE REQUEST message.

Step	Direction		Message	Comments
	UE	SS		
1..6	<-- -->		Paging	Use the CS paging procedure for testing of CS and combined CS/PS reference radio bearer configurations. Use the PS paging procedure for testing of PS reference radio bearer configurations.
7	<--		ACTIVATE RB TEST MODE (DCCH)	TC
8	-->		ACTIVATE RB TEST MODE COMPLETE (DCCH)	TC
9	<--		RADIO BEARER SETUP (DCCH)	RRC
10	-->		RADIO BEARER SETUP COMPLETE (DCCH)	RRC
11	<--		TRANSPORT FORMAT COMBINATION CONTROL (DCCH)	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
12	<--		CLOSE UE TEST LOOP (DCCH)	TC UE test mode 1 RLC SDU size is for every active radio bearer set to "UL RLC SDU size", as specified for the sub-test.
13	-->		CLOSE UE TEST LOOP COMPLETE (DCCH)	TC
14a	<-- -->		Test data	SS sends continues test data in every TTI using the downlink transport format combination under test. The number of RLC SDUs and their sizes are specified in the actual test case. SS checks returned data
14b			Wait T1	SS continue to send data every TTI and check the returned data for time T1 T1 = 12 times the max TTI in the actual radio bearer combination under test
15a	<-- --> <--		Test data (DTCH) + MEASUREMENT CONTROL (DCCH)	SS continues sending test data in every TTI. SS sends a MEASUREMENT CONTROL message simultaneously to the test data requesting periodic reporting at interval T2
15b	<-- --> -->		Test data (DTCH) + MEASUREMENT REPORT (DCCH)	SS continue to send data in every TTI and check the returned data for time 2xT2 SS checks that at least one MEASUREMENT REPORT message is received
16	<--		OPEN UE TEST LOOP (DCCH)	TC
17	-->		OPEN UE TEST LOOP COMPLETE (DCCH)	TC
18			Repeat steps 11 to 17 for every sub-test.	
19			RB RELEASE (DCCH)	RRC Optional step
20	<--		DEACTIVATE RB TEST MODE (DCCH)	TC Optional step
21	-->		DEACTIVATE RB TEST MODE COMPLETE (DCCH)	TC Optional step

<End modified section>

<Start next modified section>

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(alt. 1x0)	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1 , DL_TFC16	UL_TFC1 , UL_TFC7	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC69	UL_TFC0, UL_TFC1, UL_TFC69, UL_TFC740	RB5: 39 RB6: 103 RB7: 60 RB8: 632342	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_TFC69	UL_TFC0, UL_TFC2, UL_TFC69, UL_TFC844	RB5: 81 RB6: 103 RB7: 60 RB8: 632342	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_TFC69	UL_TFC0, UL_TFC3, UL_TFC69, UL_TFC942	RB5: 39 RB6: 103 RB7: 60 RB8: 632342	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_TFC69	UL_TFC0, UL_TFC1 , UL_TFC3 , UL_TFC4, UL_TFC69, UL_TFC7 , UL_TFC9 , UL_TFC103	RB5: 39 RB6: 103 RB7: 60 RB8: 632342	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_TFC69	UL_TFC0, UL_TFC2 , UL_TFC3 , UL_TFC5, UL_TFC6 , UL_TFC8 , UL_TFC9, UL_TFC114	RB5: 81 RB6: 103 RB7: 60 RB8: 632342	RB5: 81 RB6: 103 RB7: 60 RB8: 312
6	DL_TFC6 , DL_TFC21	UL_TFC3 , UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC96	UL_TFC0 , UL_TFC3 , UL_TFC6 , UL_TFC9 UL_TFC 0 , UL_TFC3 , UL_TFC9 , UL_TFC12	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_TFC69	UL_TFC0 , UL_TFC1 , UL_TFC3 , UL_TFC4 , UL_TFC6 , UL_TFC7 , UL_TFC9 , UL_TFC10 UL_TF C0 , UL_TFC4 , UL_TFC9 , UL_TFC13	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_TFC69	UL_TFC0 , UL_TFC2 , UL_TFC3 , UL_TFC5 , UL_TFC6 , UL_TFC8 , UL_TFC9 , UL_TFC11 UL_TF C0 , UL_TFC5 , UL_TFC9 , UL_TFC14	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	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
9	DL_TFC9 , DL_TFC24	UL_TFC3 , UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC69	UL_TFC0 , UL_TFC3 , UL_TFC6 , UL_TFC9 UL_TFC0, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 39 RB6: 103 RB7: 60 RB8: 632 952	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_TFC69	UL_TFC0 , UL_TFC1 , UL_TFC3 , UL_TFC4 , UL_TFC6 , UL_TFC7 , UL_TFC9 , UL_TFC10 UL_TFC0, UL_TFC4, UL_TFC9, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 632 952	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_TFC69	UL_TFC0 , UL_TFC2 , UL_TFC3 , UL_TFC5 , UL_TFC6 , UL_TFC8 , UL_TFC9 , UL_TFC11 UL_TFC0, UL_TFC5, UL_TFC9, UL_TFC14	RB5: 81 RB6: 103 RB7: 60 RB8: 632 952	RB5: 81 RB6: 103 RB7: 60 RB8: 952
12	DL_TFC12 , DL_TFC27	UL_TFC3 , UL_TFC9	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC69	UL_TFC0 , UL_TFC3 , UL_TFC6 , UL_TFC9 UL_TFC0, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 39 RB6: 103 RB7: 60 RB8: 632 1272	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_TFC69	UL_TFC0 , UL_TFC1 , UL_TFC3 , UL_TFC4 , UL_TFC6 , UL_TFC7 , UL_TFC9 , UL_TFC10 UL_TFC0, UL_TFC4, UL_TFC9, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 632 1272	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_TFC69	UL_TFC0 , UL_TFC2 , UL_TFC3 , UL_TFC5 , UL_TFC6 , UL_TFC8 , UL_TFC9 , UL_TFC11 UL_TFC0, UL_TFC5, UL_TFC9, UL_TFC14	RB5: 81 RB6: 103 RB7: 60 RB8: 632 1272	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
NOTE:	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).					

~~See 14.1.1 for test procedure.~~

14.2.39.1.4 Test requirements

See 14.1.2~~1~~ 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.
 - ~~— for sub-test 1: RB5/TF1 (1x39).~~
 - ~~— for sub-test 2: RB5/TF2 (1x81); RB6/TF1 (1x103); and RB7/TF1 (1x60).~~
 - ~~— for sub-test 3, 6, 9 and 12: RB8/TF1 (1x336)~~
 - ~~— for sub-test 4, 7, 10 and 13: RB5/TF1 (1x39) and RB8/TF1 (1x336).~~
 - ~~— for sub-test 5, 8, 11 and 14: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF1 (1x336).~~
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 first 312 bits equal to the content of the test data sent by the SS in downlink~~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 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 ~~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 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 ~~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 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(alt. 1x0)	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_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_TFC2, 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_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_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_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_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_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
8	DL_TFC8, DL_TFC23	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC2 , 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_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632 952	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_TFC6 , UL_TFC7, UL_TFC9, UL_TFC10 , UL_TFC15 , UL_TFC16 ⁵	RB5: 39 RB6: 103 RB7: 60 RB8: 632 952	RB5: 39 RB6: No data RB7: No data RB8: 952

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)
11	DL_TFC11, DL_TFC26	UL_TFC8, UL_TFC17	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC2 , UL_TFC6 , UL_TFC8, UL_TFC9, UL_TFC11 , UL_TFC15 , UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632 952	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_TFC6, UL_TFC9, UL_TFC15	RB5: 39 RB6: 103 RB7: 60 RB8: 632 4272	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_TFC6 , UL_TFC7, UL_TFC9, UL_TFC10 , UL_TFC15 , UL_TFC16	RB5: 39 RB6: 103 RB7: 60 RB8: 632 4272	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_TFC2 , UL_TFC6 , UL_TFC8, UL_TFC9, UL_TFC11 , UL_TFC15 , UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 632 4272	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
NOTE:	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).					

~~See 14.1.1 for test procedure.~~

14.2.39.2.4 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 TFCIs as specified for the actual sub-test](#).
 - ~~— for sub test 1: RB5/TF1 (1x39).~~
 - ~~— for sub test 2: RB5/TF2 (1x81); RB6/TF1 (1x103); and RB7/TF1 (1x60).~~
 - ~~— for sub test 3: RB8/TF1 (1x336)~~
 - ~~— for sub test 4: RB5/TF1 (1x39) and RB8/TF1 (1x336).~~
 - ~~— for sub test 5: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF1 (1x336).~~
 - ~~— for sub test 6, 9 and 12: RB8/TF2 (2x336)~~
 - ~~— for sub test 7, 10 and 13: RB5/TF1 (1x39) and RB8/TF2 (2x336).~~
 - ~~— for sub test 8, 11 and 14: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF2 (2x336).~~
- 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.
- 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 first 632 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 10: an RLC SDU on RB8 having the first 632 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 11: an RLC SDU on RB8 having the first 632 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 12: an RLC SDU on RB8 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 RB5, RB6 and RB7.
- for sub-test 13: an RLC SDU on RB8 having the first 632 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 14: an RLC SDU on RB8 having the first 632 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.

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(alt. 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

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 TFCs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1, DL_TFC16	UL_TFC1, UL_TFC16	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, 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_TFC2, 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_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_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_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_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_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_TFC23	UL_TFC8, UL_TFC23	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC2 , 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_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_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

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)
11	DL_TFC11 , DL_TFC26	UL_TFC11 , UL_TFC26	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0 , 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_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_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_TFC2 , 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
NOTE:	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).					

~~See 14.1.1 for test procedure.~~

14.2.40.4 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 TFCIs as specified for the actual sub-test.](#)
 - ~~— for sub test 1: RB5/TF1 (1x39).~~
 - ~~— for sub test 2: RB5/TF2 (1x81); RB6/TF1 (1x103); and RB7/TF1 (1x60).~~
 - ~~— for sub test 3: RB8/TF1 (1x336)~~
 - ~~— for sub test 4: RB5/TF1 (1x39) and RB8/TF1 (1x336).~~
 - ~~— for sub test 5: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF1 (1x336).~~
 - ~~— for sub test 6: RB8/TF2 (2x336)~~
 - ~~— for sub test 7: RB5/TF1 (1x39) and RB8/TF2 (2x336).~~
 - ~~— for sub test 8: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF2 (2x336).~~

- ~~— for sub-test 9: RB8/TF3 (3x336)~~
- ~~— for sub-test 10: RB5/TF1 (1x39) and RB8/TF3 (3x336).~~
- ~~— for sub-test 11: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF3 (3x336).~~
- ~~— for sub-test 12: RB8/TF4 (4x336)~~
- ~~— for sub-test 13: RB5/TF1 (1x39) and RB8/TF4 (4x336).~~
- ~~— for sub-test 14: RB5/TF2 (1x81); RB6/TF1 (1x103); RB7/TF1 (1x60); and RB8/TF4 (4x336).~~

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.](#)

<End of modified section>

CHANGE REQUEST

⌘ **TS 34.123-1 CR 203** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Update of stand-alone signalling radio bearer test cases		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
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-4 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)

Reason for change:	⌘ Correction of references to 34.108. Stand-alone 13.6 kbps signalling radio bearer and stand-alone signalling radio bearer for PCCH are implicitly tested by other test cases.
Summary of change:	⌘ <ol style="list-style-type: none">1. Corrected references to 34.108 for stand-alone signalling radio bearer test cases: 14.2.1, 14.2.22. Marked test case for stand-alone 13.6 kbps signalling radio bearer as implicitly tested (included in generic setup procedure performed by many test cases).3. Marked test case for stand-alone signalling radio bearer for PCCH in TS 34.108, clause 6.10.2.4.3.1 as implicitly tested
Consequences if not approved:	⌘ Incorrect references. Unnecessary testing.

Clauses affected:	⌘ 14.2.1, 14.2.2, 14.2.3, 14.4.1
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Affects R99 and REL4 Change 2 is dependent on approval of CR in T1S-020156 (Update of generic setup procedures to use 13.6 kbps SRB in RRC connection establishment) and CR in T1S-020161 (Update of default values for RRC CONNECTION SETUP in Annex A to use 13.6 kbps SRB.)

Change 3 is dependent on approval of CR in T1S-020193 to test case 8.1.2.2.

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ¶ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of modified section>

14.2 Combinations on DPCH

14.2.1 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 6.10.2.4.1.1.

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 6.10.2.4.1.1.

14.2.2 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 6.10.2.4.1.2.

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 6.10.2.4.1.2.

14.2.3 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 6.10.2.4.1.3 is the default signalling radio bearer used in the generic setup procedure as specified in TS 34.108 clause 7.

~~Test to verify establishment and signalling of stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.3.~~

~~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 6.10.2.4.1.3.~~

<End of modified section>

<Start of next modified section>

14.4 Combinations on SCCPCH

14.4.1 Stand-alone signalling RB for PCCH

Implicitly tested.

NOTE The stand-alone signalling radio bearer for PCCH in TS 34.108, clause 6.10.2.4.3.1 is used in RRC test case 8.1.2.2.

~~Test to verify establishment and signalling of stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.1.~~

~~The test case is performed by running test case 8.1.1.2 (Paging for Connection in connected mode (CELL_PCH)) using the stand-alone signalling reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.1.~~

<End of modified section>

CHANGE REQUEST

⌘ **TS 34.123-1 CR 216** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘
Spec Title: User Equipment (UE) conformance specification; ⌘
 Part 1: Protocol conformance specification

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Update of clause 8.3.1 to be applicable to 3.84 Mcps TDD and 1.28 Mcps TDD		
Source:	⌘ Siemens		
Work item code:	⌘ TEI, LCRTDD Date: ⌘ 20 March 2002		
Category:	⌘ F Release: ⌘ REL-4		
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <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. </td> <td style="width: 50%; vertical-align: top;"> <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) </td> </tr> </table>	<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)
<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)		

Reason for change:	⌘ UE for TDD mode cannot be tested With these updates the test cases could be reused with minimal changes for 3.84 Mcps TDD and 1.28 Mcps TDD properly.
Summary of change:	⌘ <ul style="list-style-type: none"> • Channels and values are specified for 3.84 Mcps and 1.28 Mcps TDD if needed. • CELL UPDATE CONFIRM message specified for TDD mode. • References corrected in 8.3.1.21, 8.3.1.22 • SIBs 3, 4 11 and 12 are specified for test cases 8.3.1.23 and 8.3.1.24
Consequences if not approved:	⌘ The test proeses in TS 34.123-1 cannot test UE correctly.

Clauses affected:	⌘
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ TS 34.123-2 <input checked="" type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Affects Rel 99 and Rel '4 UE 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.

8.3 RRC connection mobility procedure

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

This procedure is used to update UTRAN with the current cell of the UE after it has performed a cell reselection in CELL_FACH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1.3 Test purpose

To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. 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	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	<u>-60</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>

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. SS verifies that the UE does not send any response to this 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 reselection'. SS replies with a CELL UPDATE CONFIRM message which contains IE "Physical channel information elements". The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to acknowledge the change in physical resources. 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". The UE shall send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. 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.

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". SS set k=0.
5				SS checks the uplink PRACH channel to verify that no response is sent by UE.
6				SS reverses the transmission power level of cell 1 and cell 2.
7		→	CELL UPDATE	
8		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH". If $k \geq 0$, new C-RNTI and U-RNTI identities are assigned to the UE. If $k > 0$, IE "Physical channel information elements" is included in this message. If $k > 1$, IE "Transport channel information elements" is included in this message. If $k > 2$, IE "RB information to be affected list" is included in this

9	→	UTRAN MOBILITY INFORMATION CONFIRM	If k=1 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
10	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	If k=2 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
11	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	If k=3 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
12	→	RADIO BEARER RECONFIGURATION COMPLETE	If k=4 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
13	→	RADIO BEARER RELEASE COMPLETE	If k=5 when SS received this message, proceed to next step. Else test fails. If this message is not received, test fails.
14			SS reverses the transmission power level of cell 1 and cell 2.
15	→	CELL UPDATE	
16			SS reverses the transmission power level of cell 1 and cell 2.
17	→	CELL UPDATE	
18	←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 3, 7, 15 and 17)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI	Check to see if set to '0000 0000 0001' In step 3, check to see if set to '0000 0000 0000 0000 0001'. In step 7 and when k<1, check to see if set to '0000 0000 0000 0000 0001'. In step 7 and when k>0, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 8. In step 15 and 17, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 8.
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4 and 18)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_FACH

CELL UPDATE CONFIRM (Step 8 and k = 0)

Use the same message sub-type found in step 4, 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	An arbitrary 16-bits string which is different from original C-RNTI assigned in RRC connection establishment procedure.

CELL UPDATE CONFIRM (Step 8 and k=1)

Use the same message sub-type found in step 8 and k=0, with the following exceptions:

Information Element	Value/remark
Maximum allowed uplink TX power	3 dB below the follow value: Minimum of {33 dBm for FDD and 30 dBm for TDD , maximum uplink power allowed under the UE power class}

CELL UPDATE CONFIRM (Step 8 and k=2)

Use the same message sub-type found in step 8 and k=1, with the following exceptions:

Information Element	Value/remark
Added or Reconfigured uplink TrCH information	Same as the system information block type 5
Added or Reconfigured downlink TrCH information	Same as the system information block type 5

CELL UPDATE CONFIRM (Step 8 and k=3)

Use the same message sub-type found in step 8 and k=2, with the following exceptions:

Information Element	Value/remark
RB information to be reconfigure - RB identity - PDCP info - PDCP SN info - RLC info - RB mapping info - RB stop/continue	20 Not Present Not Present Not Present Not Present Stop

CELL UPDATE CONFIRM (Step 8 and k=4)

Use the same message sub-type found in step 8 and k=3, with the following exceptions:

Information Element	Value/remark
RB information to release -RB identity	4

8.3.1.1.5 Test requirement

After step 2 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".

After step 4 the UE shall not transmit any uplink message in response to the CELL UPDATE CONFIRMATION message received in step 4.

After step 6 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.

After step 8, if k=1, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message to acknowledge that it has started to use the new RNTI identities allocated.

If k=2, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new physical channel assigned.

If k=3, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the transport channels.

If k=4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the radio bearers.

If k=5, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message to acknowledge that it has release its radio bearers.

After step 14 the UE shall transmit a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

After step 16 the UE shall transmit a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

8.3.1.2 Cell Update: cell reselection in CELL_PCH

8.3.1.2.1 Definition

8.3.1.2.2 Conformance requirement

This procedure is to update UTRAN with information of the current cell, after a cell reselection has occurred in CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.3.1.

8.3.1.2.3 Test purpose

To confirm that the UE, in CELL_PCH state, executes a cell update procedure after the successful reselection of another UTRA cell.

8.3.1.2.4 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

The UE is brought to CELL_PCH state and is camped onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.1. When the UE detects the presence of cell 2, it moves to CELL_FACH state and transmits a CELL UPDATE message on the uplink CCCH. The value "cell reselection" shall be set in IE "Cell update cause" in CELL UPDATE message. Upon reception of CELL_UPDATE message, SS replies with a CELL UPDATE CONFIRM message with the IE "RRC State Indicator" set to "CELL_PCH". After receiving this message, the UE returns to CELL_PCH state without transmitting any uplink message. The SS transmits a PAGING TYPE 1 message, causing the UE to enter CELL_FACH state and the UE shall transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "paging response". SS shall respond with a CELL UPDATE CONFIRM message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state in cell 1
2				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 and attempt to perform a cell reselection.
3		→	CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection"
4		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
5				The UE is in CELL_PCH state.
6		←	PAGING TYPE 1	The SS transmits thos message with a matched identity.
7		→	CELL UPDATE	The UE is in CELL_FACH state
8		←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Steps 3 and 7)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI	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 Re-selection' when in step 3. Check to see if set to "paging response" when in step 7.
Cell Update Cause	

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH

8.3.1.2.5 Test requirement

After step 2 the UE shall reselect to cell 2 and transmit a CELL UPDATE message, containing the IE "Cell update cause" set to "cell reselection".

After step 6 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "paging response".

8.3.1.3 Cell Update: periodical cell update in CELL_FACH

8.3.1.3.1 Definition

8.3.1.3.2 Conformance requirement

This procedure is to update UTRAN with the current cell information, after the UE has remained in the service area in the CELL_FACH state for a period exceeding the timer value T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.3.3 Test purpose

To confirm that the UE executes a periodical cell update procedure following the expiry of timer T305.

8.3.1.3.4 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 8.3.1.3

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 8.3.1.3 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_FACH state. When the UE detects the expiry of timer T305 according to the settings in system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH with a cause indicating periodical cell updating. SS replies with a CELL UPDATE CONFIRM message, and IE "RRC State Indicator" is set to "CELL_FACH". SS verifies that the UE does not transmit any uplink message. SS then waits for T305 to expire again. The UE shall send another CELL UPDATE message to report periodic cell updating. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "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 to acknowledge the receipt of the new UE identities. Next, 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 8.3.1.3, 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. SS then monitors the uplink CCCH for a period up to the maximum possible value for timer T305 (720 minutes) and verifies that no CELL_UPDATE message is received. After this, the 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 "T0" in table 8.3.1.3, 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. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message after T305 (5 minutes) expires.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS waits until T305 has expired.
2		→	CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell updating"
3		←	CELL UPDATE CONFIRM	No RNTI identities are given. No information on PRACH and S-CCPCH are provided.
4				SS verifies that no uplink message is received from UE. SS waits for another period to allow T305 to expire.
5		→	CELL UPDATE	Set to "periodical cell update" in IE "Cell update cause" upon the expiry of timer T305.
6		←	CELL UPDATE CONFIRM	Including IEs "new C-RNTI", "new U-RNTI" and IE "RRC State Indicator" is set to "CELL_FACH"
7		→	UTRAN MOBILITY INFORMATION CONFIRM	
8		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to 'infintiy'.
9		→	UTRAN MOBILITY INFORMATION CONFIRM	
10				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.3
11		→	CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
12		←	CELL UPDATE CONFIRM	
13				SS waits for 720 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
14		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to '5'.
15		→	UTRAN MOBILITY INFORMATION CONFIRM	
16				SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.3
17		→	CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
18		←	CELL UPDATE CONFIRM	
19		→	CELL UPDATE	UE shall transmit this message with "cell update cause" set to "periodical cell updating" after T305 expires.
20		←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2 and 5)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - 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'

CELL UPDATE (Step 11 and 17)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	Check to see if set to '0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6. Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3, 12, 18 and 20)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI	Set to '0000 0000 0001' Set to an arbitrary string different from '0000 0000 0000 0000 0001'

CELL UPDATE (Step 19)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	Check to see if set to '0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6. Check to see if set to 'periodical cell updating'

UTRAN MOBILITY INFORMATION (Step 8)

Use the same message sub-type found in Annex A, 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	infinity

UTRAN MOBILITY INFORMATION (Step 14)

Use the same message sub-type found in Annex A, 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	5

8.3.1.3.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 and then transmits a CELL UPDATE message setting value "periodical cell update" into IE "Cell update cause".

After step 3 the UE shall not send any uplink message as a response to CELL UPDATE CONFIRM message sent in step 3.

After step 4 the UE shall send a CELL UPDATE message, specifying the cell updating cause to be "periodical cell update".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

After step 8, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

Between step 12 and 14, the UE shall not transmit any CELL UPDATE message.

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 16, 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 with IE "cell update cause" set to "periodical cell update" on the uplink CCCH.

8.3.1.4 Cell Update: periodical cell update in CELL_PCH

8.3.1.4.1 Definition

8.3.1.4.2 Conformance requirement

This procedure is to update UTRAN with the information of the current cell when the UE detects that it is still in the service area, while residing in the CELL_PCH state, after the expiry of timer T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.4.3 Test purpose

To confirm that the UE, in CELL_PCH state, executes a cell update procedure after the expiry of timer T305.

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	<u>-60</u>	<u>-75</u>	<u>-75</u>	<u>-60</u>

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. 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". Then UE shall enter CELL_PCH state. SS then monitors the uplink CCCH for a period up to the maximum possible value for timer T305 (720 minutes) 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. 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". 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 to end the procedure.

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	
4		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to '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 transmitting this message.
9				SS waits for 720 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.

Step	Direction		Message	Comment
	UE	SS		
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	
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 transmitting 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 Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE (Step 7, 11 and 16)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3, 12 and 20)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 8 and 17)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC state indicator	CELL_PCH

UTRAN MOBILITY INFORMATION (Step 4 and 13)

Use the same message sub-type found in Annex A, 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 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 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.

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

This procedure is to update UTRAN with the current cell information if the UE wants to transmit uplink data while in URA_PCH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.5.3 Test purpose

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.

Test Procedure

SS sends a MEASUREMENT CONTROL message to trigger UE to measure the CPICH RSCP in a intra frequency measurement and to report periodically by the MEASUREMENT REPORT message using UM RLC. UE shall send MEASUREMENT REPORT message to SS using UM RLC on DCCH. SS then transmit a RADIO BEARER RELEASE message with IE "RRC State Indicator" is set to "URA_PCH". The UE shall reply with RADIO BEARER RELEASE COMPLETE message and move to URA_PCH state. UE shall detect that the periodical timer for measurement reporting has elapsed and attempt to transmit a MEASUREMENT REPORT message. 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. The UE shall stay in CELL_FACH state and transmit MEASUREMENT REPORT message using UM RLC on DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2		←	MEASUREMENT CONTROL	
3		→	MEASUREMENT REPORT	
4		←	RADIO BEARER RELEASE	IE "RRC State Indicator" set to "URA_PCH"
5		→	RADIO BEARER RELEASE COMPLETE	UE moves to URA_PCH state.
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	Use default message content.
8		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in Annex A with the following exceptions:

Information Element	Value/remark
Measurement Reporting Mode - Measurement Report Transfer Mode - Measurement Reporting/Event Trigger Reporting Mode	Unacknowledged mode RLC Periodical

RADIO BEARER RELEASE (Step 4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	URA_PCH
RB information to release list - RB identity	20 or 21 (for radio access bearer)
RB information to be affected list	Not Present
UL Transport channel information common for all transport channel	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured UL TrCH information list	Not Present
DL Transport channel information common for all transport channel	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured UL TrCH information list	Not Present
CHOICE channel requirement	Not Present
Downlink information per radio link list	Not Present

CELL UPDATE (Step 6)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI	Check to see if set to '0000 0000 0001'
Cell Update Cause	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 Annex A.

MEASUREMENT REPORT (Step 3 and 8)

Only the message type IE in this message will be checked.

RADIO BEARER RELEASE COMPLETE (Step 5)

Only the message type IE in this message will be checked.

8.3.1.5.5 Test requirement

After step 2, UE shall transmit a MEASUREMENT REPORT message to SS using UM RLC on DCCH when 64 seconds has elapsed since the acknowledgement of MEASUREMENT CONTROL message.

After step 4, UE shall transmit a RADIO BEARER RELEASE COMPLETE message and move to URA_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, UE shall transmit MEASUREMENT REPORT 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

This procedure is to update UTRAN with the current cell of the UE if the UE wants to transmit uplink data when the UE is in CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.6.3 Test purpose

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.

Test Procedure

The UE is in the CELL_FACH state. SS sends a MEASUREMENT CONTROL message to trigger UE to measure the CPICH RSCP in a intra frequency measurement and to report periodically by the MEASUREMENT REPORT message using UM RLC. UE shall send a MEASUREMENT REPORT message to SS using UM RLC on DCCH. SS then transmits a RADIO BEARER RELEASE message with IE "RRC State Indicator" is set to "CELL_PCH". The UE shall reply with RADIO BEARER RELEASE COMPLETE message and move to CELL_PCH state. UE shall detect that the periodical timer for measurement reporting has elapsed and attempt to transmit a MEASUREMENT REPORT message. 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. The UE shall stay in CELL_FACH state and transmit a MEASUREMENT REPORT message using UM RLC on DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
2		←	MEASUREMENT CONTROL	
3		→	MEASUREMENT REPORT	
4		←	RADIO BEARER RELEASE	IE "RRC State Indicator" set to "CELL_PCH"
5		→	RADIO BEARER RELEASE COMPLETE	UE moves to CELL_PCH state.
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	Use default message content .
8		→	MEASUREMENT REPORT	

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Use the same message sub-type found in Annex A with the following exceptions:

Information Element	Value/remark
Measurement Reporting Mode - Measurement Report Transfer Mode - Measurement Reporting/Event Trigger Reporting Mode	Unacknowledged mode RLC Periodical

RADIO BEARER RELEASE (Step 4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
RB information to release list - RB identity	20 or 21 (for radio access bearer)
RB information to be affected list	Not Present
UL Transport channel information common for all transport channel	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured UL TrCH information list	Not Present
DL Transport channel information common for all transport channel	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured UL TrCH information list	Not Present
CHOICE channel requirement	Not Present
Downlink information per radio link list	Not Present

CELL UPDATE (Step 6)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'uplink data transmission'

CELL UPDATE CONFIRM (Step 7)

Use the same message sub-type found in Annex A.

MEASUREMENT REPORT (Step 3 and 8)

Only the message type IE in this message will be checked.

RADIO BEARER RELEASE COMPLETE (Step 5)

Only the message type IE in this message will be checked.

8.3.1.6.5 Test requirement

After step 2, UE shall transmit a MEASUREMENT REPORT message to SS using UM RLC on DCCH when 64 seconds has elapsed since the acknowledgement of MEASUREMENT CONTROL message.

After step 4, UE shall transmit a RADIO BEARER RELEASE 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, UE shall transmit a MEASUREMENT REPORT message to SS using UM RLC on DCCH.

8.3.1.7 Void

8.3.1.8 Void

8.3.1.9 Cell Update: re-entering of service area after T305 expiry and being out of service area

8.3.1.9.1 Definition

8.3.1.9.2 Conformance requirement

When a UE detects that it's out of service area after experiencing a T305 timer expiry, it shall try to search for a suitable cell to camp on. At the same time, it shall start timer T307. If the UE subsequently re-enters the service area of a cell before T307 expires, it shall perform a cell update procedure.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.9.3 Test purpose

To confirm that the UE performs a cell search after experiencing an "out of service area" condition following the expiry of timer T305. To confirm that the UE initiates cell updating procedure if it manages to re-enter the service area.

8.3.1.9.4

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

Table 8.3.1.9

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.9 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 the CELL_FACH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that $S < 0$. Following the expiry of periodic cell updating timer T305 according to the system information, the UE shall detect that it is out of service area. Within the time interval equivalent to T307 timer value, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9 so that $S > 0$. The UE shall find that it is back in service area, and transmit a CELL UPDATE message to the SS on the uplink CCCH. In this message, the IE "Cell update cause" shall be set to "re-entered service area". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message with the IE "RRC State Indicator" set "CELL_PCH" on the downlink DCCH. The UE shall enter CELL_PCH state. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that $S < 0$. Following the expiry of periodic cell updating timer T305 according to the system information, the UE shall detect that it is out of service area. Within the time interval equivalent to T307 timer value, SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9 so that $S > 0$. The UE shall find that it is back in service area, move to CELL_FACH and transmits a CELL UPDATE message to the SS on the uplink CCCH. In this message, the IE "Cell update cause" shall be set to "re-entered service area". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message on the downlink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state of cell 1.
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b		←	SYSTEM INFORMATION CHANGE INDICATION	
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that its S value falls below 0.
3				The UE shall detect a "out of service" condition upon expiry of timer T305 and it shall search for other cells to camp on. (T307 timer starts)
4				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9.
5		→	CELL UPDATE	The value "re-entered service area" shall be found in IE "Cell update cause" in this message
6		←	CELL UPDATE CONFIRM	"RRC State Indicator" is set to "CELL_PCH"
7				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.9 so that its S value falls below 0 and waits until T305 has expired.
8				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.9.
9		→	CELL UPDATE	UE shall move to CELL_FACH. It shall transmit this message with cell update cause set to "re-entered service area"
10		←	CELL UPDATE CONFIRM	

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

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

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

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

Information Element	Value/remark
Qrxlevmin	-70

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type BCCH modification info MIB Value tag	2

CELL UPDATE (Step 5 and 9)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - 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 're-entered service area'

CELL UPDATE CONFIRM (Step 6 and 10)

Use the same message sub-type found in Annex A, with the following exception.

Information Element	Value/remark
RRC State Indicator	CELL_PCH

8.3.1.9.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message in which the IE "Cell update cause" is set to the value "re-entered service area".

After step 8 the UE shall move to CELL_FACH and then transmit a CELL UPDATE message, with the IE "Cell Update Cause" set to "re-entered service area".

8.3.1.10 Cell Update: expiry of T307 after T305 expiry and being out of service area

8.3.1.10.1 Definition

8.3.1.10.2 Conformance requirement

This procedure is required to cater for the case of a failure to update UTRAN with the current cell, after the expiry of T307. In this case, the UE shall return to idle mode and perform cell reselection if possible.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.10.3 Test purpose

To confirm that the UE moves to idle mode after the expiry of T307, indicating that it is out of service area when attempting to perform a periodic cell updating procedure.

8.3.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

Table 8.3.1.10

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.1.10 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in CELL_FACH state at the start of the test. Before the expiry of periodic cell updating timer T305, the content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that $S < 0$ and this results in a "out of service area" condition. The SS continues to listen to the uplink channel to detect possible attempts to perform a cell updating procedure. The UE shall not send any CELL UPDATE message on the uplink DCCH, instead it triggers timer T307 and T305. After the expiry of timer T307 and SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that $S > 0$, the UE shall enter idle state. This is confirmed by the SS when it sends a PAGING TYPE 1 message to the UE using UE identity, and the UE shall respond to the message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state.
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b		←	SYSTEM INFORMATION CHANGE INDICATION	
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.10 so that the cell is no longer suitable for camping. The UE shall detect that it is out of service area and refrains from transmitting CELL UPDATE message due to periodic cell updating.
3				The UE detects the expiry of timer T305 and it searches for other cells to camp on. After the expiry of timer T307, the UE shall enter idle mode. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.1.10 so that the cell is suitable for camping.
4		←	PAGING TYPE 1	SS pages the UE at its assigned paging occasion using the allocated UE identity.
5		→	RRC CONNECTION REQUEST	The UE shall respond to this page as it has already entered the idle mode.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1a)

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

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 3 and 4 (Step 1a)

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

Information Element	Value/remark
Qrxlevmin	-70

SYSTEM INFORMATION CHANGE INDICATION (Step 1b)

Information Element	Value/remark
Message Type BCCH modification info MIB Value tag	2

PAGING TYPE 1 (Step 4)

Use the same message type found in Annex A, with the following exception.

Information Element	Value/remark
Paging record list Paging record CHOICE Used paging identity - Paging cause - CN domain identity - CHOICE UE Identity - IMSI	Only 1 entry CN identity Terminating Call with one of the supported services Supported Domain (PS Domain or CS Domain) IMSI Set to the same IMSI value stored in the TEST USIM card.

8.3.1.10.5 Test requirement

After step 4 the UE shall transmit a RRC CONNECTION REQUEST message to respond to a PAGING TYPE 1 message.

8.3.1.11 Cell Update: Success after T302 time-out

8.3.1.11.1 Definition

8.3.1.11.2 Conformance requirement

The UE transmits a CELL UPDATE message to the UTRAN when it needs to update the UTRAN with the current cell of the UE. When the UE does not receive a CELL UPDATE CONFIRM message upon expiry of timer T302, the UE transmits a CELL UPDATE message repeatedly until its internal counter V302 counter is greater than N302.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.11.3 Test purpose

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.

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	

Specific Message Contents

CELL UPDATE (Step 2)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodic cell updating'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exception:

Information Element	Value/remark
New C-RNTI	Set to an arbitrary string different from '0000 0000 0000 0001'

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.

8.3.1.12 Cell Update: Failure (After Maximum Re-transmissions)

8.3.1.12.1 Definition

8.3.1.12.2 Conformance requirement

The UE transmits a CELL UPDATE message to the UTRAN when it needs to update UTRAN with information on the current cell of the UE. If the UE fails to receive a CELL UPDATE CONFIRM message, it re-transmits a CELL UPDATE message repeatedly upon the expiry of timer T302 until the value of V302 counter is greater than N302. If V302 is greater than N302, the UE stop the re-transmission and enters idle state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.12.3 Test purpose

To confirm that the UE repeats the cell update procedure upon the expiry of timer T302 and moves to idle state when its internal counter V302 is greater than N302.

8.3.1.12.4 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 initially in CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH to perform a periodic cell updating procedure. The SS ignores this message, and the UE shall attempt to re-transmit a CELL UPDATE message up to a maximum of (N302+1) times after the expiry of timer T302. After (N302) attempts of retransmission, the UE shall return to idle state. SS transmits a PAGING TYPE 1 message with UE's identity. UE shall respond with a RRC CONNECTION REQUEST message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS sets its internal counter K=0 and waits for a period equals to timer value T305.
2		→	CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause".
3				SS transmits no response to the UE and increments counter K.
4				SS waits for an additional period equal to T302 timer and if K is not greater than N302, then next step is step 2. Else the next step is step 5.
5				The UE shall enter idle mode state.

Specific Message Contents

CELL UPDATE (Step 2)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodic cell updating'

8.3.1.12.5 Test requirement

After step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH and set value "periodical cell update" into IE "Cell update cause".

After step 3 and if K is not greater than N302, the UE shall retry to transmit a CELL UPDATE message.

8.3.1.13 Cell Update: Reception of Invalid CELL UPDATE CONFIRM Message

8.3.1.13.1 Definition

8.3.1.13.2 Conformance Requirement

If the UE encounters an invalid CELL UPDATE CONFIRM message while executing a cell update procedure, it shall check the current value of its internal counter V302. If V302 is not greater than N302, the UE shall set contexts pertaining to protocol error, re-transmits a CELL UPDATE message on uplink CCCH, restart T302 timer and increments V302. It shall use the same "Cell Update Cause" as before receiving the invalid downlink message.

8.3.1.13.3 Test Purpose

To confirm that the UE retransmits a CELL UPDATE message when it receives an invalid CELL UPDATE CONFIRM message, before the number of retransmissions has reached the maximum allowed value.

8.3.1.13.4

Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with an invalid CELL UPDATE CONFIRM message on downlink DCCH using UM RLC. The UE shall detect the protocol error and re-transmit a CELL UPDATE message up to a maximum of N302 times. SS then transmit a valid CELL UPDATE CONFIRM message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	The UE is in the CELL_PCH state. SS pages for the UE using the allocated connected mode identity (U-RNTI).
2		→	CELL UPDATE	Check that the value "paging response" is set in IE "Cell update cause".
3		←	CELL UPDATE CONFIRM	See specific message content.
4		→	CELL UPDATE	Check that the value "paging response" is set in IE "Cell update cause", the value "protocol error" is set in IE "failure cause" and the value "ASN.1 violation and encoding error" is set in IE "Protocol error information".
5		←	CELL UPDATE CONFIRM	Use the default message found in Annex A.

Specific Message Content

CELL UPDATE (Step 2)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE CONFIRM (Step 3)

Information Element	Value/remark
All IEs	Not Present

CELL UPDATE (Step 4)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI	Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if it is set to 'protocol error'
-Protocol error information	Check to see if it is set to "ASN.1 violation and encoding error"

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list - Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI	UTRAN identity '0000 0000 0001' '0000 0000 0000 0000 0001'

8.3.1.13.5 Test Requirement

After step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH, setting "paging response" into IE "Cell update cause".

After step 3 the UE shall transmit a CELL UPDATE message on the uplink CCCH, setting "paging response" into IE "Cell update cause", "protocol error" into IE "failure cause" and "ASN.1 violation or encoding error" into IE "Protocol error information".

8.3.1.14 Cell Update: Incompatible simultaneous reconfiguration

8.3.1.14.1 Definition

8.3.1.14.2 Conformance Requirement

If the UE encounters a CELL UPDATE CONFIRM message that includes "Physical channel information elements" and UE's variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure, it shall check the current value of its internal counter V302. If V302 is not greater than N302, the UE shall set IE "failure cause" to "Incompatible simultaneous reconfiguration", re-transmits a CELL UPDATE message on uplink CCCH, restart T302 timer and increments V302. It shall use the same "Cell Update Cause" as before receiving the downlink message.

8.3.1.14.3 Test Purpose

To confirm that the UE retransmits a CELL UPDATE message when it receives a CELL UPDATE CONFIRM message that includes "Physical channel information elements" and UE's variable ORDERED_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure, before the number of retransmissions has reached the maximum allowed value.

8.3.1.14.4

Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL UPDATE CONFIRM message contains IE "Physical channel information elements". Following that, SS immediately transmits another CELL UPDATE CONFIRM message contains IE "Physical channel information elements" before the "activation time" indicated in the previous CELL UPDATE CONFIRM message expires. The UE shall re-transmit a CELL UPDATE message with the same cause as the previous CELL UPDATE message and failure cause as "Incompatible simultaneous reconfiguration". SS then transmits a CELL UPDATE message to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	
2		→	CELL UPDATE	
3		←	CELL UPDATE CONFIRM	SS transmits this message including IE "Physical channel information elements".
4		←	CELL UPDATE CONFIRM	Sent before the activation time specified in the message in step 3 has elapsed.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	

Specific Message Content

CELL UPDATE (Step 2)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE (Step 5)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if set to 'Incompatible simultaneous reconfiguration'

CELL UPDATE CONFIRM (Step 3)

Use the same message sub-type found in Annex A, with the following exception:

Information Element	Value/remark
Activation Time Info Maximum allowed UL TX power	Current CFN-[current CFN mod 8 + 8] 30dBm

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found in Annex A, with the following exception:

Information Element	Value/remark
Activation Time Info Maximum allowed UL TX power	Current CFN-[current CFN mod 8 + 8] 25dBm

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list - Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI	UTRAN identity '0000 0000 0001' '0000 0000 0000 0000 0001'

8.3.1.14.5 Test Requirement

After step 1, UE shall transmit a CELL UPDATE message.

After step 4 the UE shall re-transmit a CELL UPDATE message with failure cause set to "Incompatible simultaneous reconfiguration".

8.3.1.15 Cell Update: Unrecoverable error in Acknowledged Mode RLC

8.3.1.15.1 Definition

8.3.1.15.2 Conformance Requirement

In CELL_FACH, the UE shall ensure that all AM RLC entities (both signalling and u-plane links) are operational. In the event that an unrecoverable error has occurred, the UE shall trigger cell update procedure to report this event. The UE shall send a CELL UPDATE message on the uplink CCCH and set the appropriate AM_RLC error indicator IE(s) to TRUE. After receiving the CELL UPDATE CONFIRM message, the UE shall reset the affected AM RLC entities and then resume transmission and reception activities.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.15.3 Test Purpose

To confirm that the UE reports the occurrence of an unrecoverable error in a C-plane AM RLC entity by initiating cell update procedure. To confirm that the UE is able to resume normal C-plane data transmission and reception after the completion of cell update procedure.

8.3.1.15.4

Method of Test

Initial Condition

System Simulator: 1 cell

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 supported by the UE

Test Procedure

The UE is initially in CELL_DCH state. SS sends a UE CAPABILITY ENQUIRY message on the DCCH using AM mode. The UE shall reply with a UE CAPABILITY INFORMATION message, sent using AM RLC on the DCCH. SS does not acknowledge the AM PDUs carrying this message. The UE shall continue to re-transmit the AM PDU carrying UE CAPABILITY INFORMATION message until the maximum re-transmission count is reached. Thereafter, the UE shall start sending RESET PDUs to request that the AM RLC entity for RRC signalling be re-initialized. SS ignores the requests and wait for a duration equivalent to (MAX_RST+1) times expiry of Timer_RST. At this point, the UE shall initiate a cell update procedure by transmitting a CELL UPDATE message on the uplink CCCH. The CELL UPDATE message shall specify the value "TRUE" in IE "AM_RLC error indicator (RB2 or RB3)" and "RLC unrecoverable error" as the cell update cause. SS replies with CELL UPDATE CONFIRM message with IE "RLC re-establish indicator (RB2 and RB3)" set to TRUE. SS then attempts to perform a local authentication by transmitting a UE CAPABILITY ENQUIRY message using AM RLC on DCCH. The UE shall respond by sending a UE CAPABILITY INFORMATION message on the uplink DCCH, verifying that the AM RLC entity for RRC signalling was successfully reset. SS shall transmit a UE CAPABILITY INFORMATION CONFIRM message to UE to end the test.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is initially in CELL_DCH state.
2		←	UE CAPABILITY ENQUIRY	
3		→	UE CAPABILITY INFORMATION	SS does not acknowledge this AM PDU. The UE shall re-transmit this AM PDU until the maximum number has been reached.
4				UE shall start to transmit a RESET PDU. SS does not respond to any RESET PDU frames originated from the UE, and it waits for a period equivalent to (MAX_RST+1) times expiry of Timer_RST.
5		→	CELL UPDATE	UE shall send this message on CCCH. IE "AM_RLC Error Indication (RB2 or RB3)" shall be set to 'TRUE'
6		←	CELL UPDATE CONFIRM	IE "RLC re-establish indicator (RB2 and RB3)" set to TRUE.
7		←	UE CAPABILITY ENQUIRY	
8		→	UE CAPABILITY INFORMATION	This message shall be transmitted using AM RLC for RRC signalling on the uplink DCCH.
9		←	UE CAPABILITY INFORMATION CONFIRM	

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2 and 7)

Use the same message found in Annex A.

UE CAPABILITY INFORMATION (Step 3 and 8)

Only the message type IE is checked for this message.

CELL UPDATE (Step 5)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
AM_RLC error indicator (RB2 or RB3)	Check to see if set to 'TRUE'
Cell update cause	RLC unrecoverable error

CELL UPDATE CONFIRM (Step 6)

Use the same message found in Annex A, with the following exception.

Information Element	Value/remark
RLC re-establish indicator (RB2 and RB3)	'TRUE'

UE CAPABILITY INFORMATION CONFIRM (Step 9)

Use the same message found in Annex A.

8.3.1.15.5 Test Requirement

After step 4 the UE shall transmit a CELL UPDATE message on the uplink CCCH to report the occurrence of an unrecoverable error in AM RLC entity for RB2 or RB3 data as well as cell update cause set to "RLC unrecoverable error".

After step 7 the UE shall send a UE CAPABILITY INFORMATION message on the uplink DCCH. This message shall be sent using the AM RLC entity for RRC signalling.

8.3.1.16 Void

8.3.1.17 Cell Update: Failure (UTRAN initiate an RRC connection release procedure on CCCH)

8.3.1.17.1 Definition

8.3.1.17.2 Conformance requirement

The UE transmits a CELL UPDATE message to the UTRAN when it needs to update UTRAN with information on the current cell of the UE. If the UE receives a RRC CONNECTION RELEASE message on CCCH, it shall release all its radio resources and enter idle mode.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.17.3 Test purpose

To confirm that the UE moves to idle state upon the reception of RRC CONNECTION RELEASE message on DCCH.

8.3.1.17.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is initially in CELL_FACH state. When the UE detects the expiry of periodic cell updating timer T305, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH to perform a periodical cell updating procedure. The SS transmits a RRC CONNECTION RELEASE message on downlink CCCH. The UE shall return to idle mode after release of all current signalling flows and radio access bearers. SS verifies that UE is in idle mode state by paging the UE with CN identity, in which case the UE shall attempt to establish a RRC connection.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause" and this message shall be sent upon expiry of timer T305.
2		←	RRC CONNECTION RELEASE	SS transmits a RRC CONNECTION RELEASE message to the UE.
3			Void	
4			Void	
5		←	PAGING TYPE 1	Page using TMSI for CS domain or P-TMSI for PS domain depending on CN domain supported by the UE.
6		→	RRC CONNECTION REQUEST	

Specific Message Contents

CELL UPDATE (Step 1)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Periodic cell updating'

RRC CONNECTION RELEASE (Step 2)

Use the same message sub-type found in Annex A.

PAGING TYPE 1 (Step 5)

Use the same message type found in Annex A, with the following exception.

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the IMSI value stored in the TEST USIM card.

8.3.1.17.5 Test requirement

In step 1 the UE shall transmit a CELL UPDATE message on the uplink CCCH and set value "periodical cell update" into IE "Cell update cause".

After step 5 the UE transmit a RRC CONNECTION REQUEST message.

8.3.1.18 Cell Update: Radio Link Failure (T314>0, T315=0)

8.3.1.18.1 Definition

8.3.1.18.2 Conformance requirement

When a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. UE must release the radio bearer which is associated with T315 if T315 is set to 0. After a successful cell re-selection and subsequent transition to CELL_FACH state, the UE transmits CELL UPDATE message on the uplink CCCH.

If the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message and the maximum allowable number of retransmission has not been reached, the UE shall select a suitable UTRA cell and transmit a CELL UPDATE message.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.18.3 Test purpose

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.

To confirm that the UE performs a cell selection procedure when it fails to configure the physical channel(s) indicated in the CELL UPDATE CONFIRM message.

8.3.1.18.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive).

UE: CS_DCCH+DTCH_DCH (state 6-9) or PS_DCCH+DTCH_DCH (state 6-10) in cell 1, depending on the CN domain(s) supported by the UE.

Table 8.3.1.18

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/3.84MHz	-60	OFF	-75	-60
P-CCPCH RSCP (TDD)	<u>dBm</u>	<u>-60</u>	<u>OFF</u>	<u>-75</u>	<u>-60</u>

Table 8.3.1.18 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 brought to CELL_DCH state in a cell 1 after making a successful outgoing call attempt. After the call has been established, SS transmits UTRAN MOBILITY INFORMATION message to UE to change to value of T315 timer. UE shall respond with a UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.18. The UE shall detect a radio link failure in cell 1 and indicate to the non-access stratum the release of the radio bearer which is associated with T315. Then it shall attempt to re-select to cell 2. 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. SS shall not configure according to this message and its downlink transmission power settings according to columns "T0" in table 8.3.1.18. UE shall fail to establish the dedicated channel in cell 2. UE shall re-select to cell 1 and transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure". Then SS responds with a CELL UPDATE CONFIRM message to end the procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	UTRAN MOBILITY INFORMATION	T315=0
2		→	UTRAN MOBILITY INFORMATION CONFIRM	
3			Void	
4				SS configures cell 1 and 2 according to column "T1" in table 8.3.1.18. SS starts to listen to the uplink CCCH of cell 2.
5			Void	
6				The UE detects the radio link failure which is associated with T315. The UE indicates to the non-access stratum the release of the radio bearer.
7		→	CELL UPDATE	The UE shall find a new cell 2 and the value "radio link failure" shall be set in IE "Cell update cause".
8		←	CELL UPDATE CONFIRM	Including dedicated physical channel parameters.
9				SS does not configure according to the message in step 8. SS configures cell 1 and 2 according to column "T0" in table 8.3.1.18.
10		→	CELL UPDATE	UE shall select cell 1 and enter CELL_FACH state to transmit this message
11		←	CELL UPDATE CONFIRM	

Specific Message Contents

UTRAN MOBILITY INFORMATION (Step 1)

The contents of UTRAN MOBILITY INFORMATION message in this test case is identical to those in Annex A 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 - T315	0

CELL UPDATE (Step 7)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI -SRNC Identity - S-RNTI Cell Update Cause	Check to see if set to value assigned in cell 2. Check to see if set to value assigned in cell 2. Check to see if set to 'radio link failure'

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
CHOICE channel requirement	Same as the set defined in the RADIO BEARER SETUP message in initial condition.

CELL UPDATE (Step 10)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned in cell 1.
-S-RNTI	Check to see if set to value assigned in cell 1.
Cell Update Cause	Check to see if set to 'radio link failure'

8.3.1.18.5 Test requirement

After step 1, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message.

After step 6, the UE shall detect the presence of cell 2, perform cell re-selection and transmit a CELL UPDATE message.

After step 9, the UE shall transmit a CELL UPDATE message with IE "Cell update cause" set to "Radio link failure".

8.3.1.19 Void

8.3.1.20 Cell Update: Reception of CELL UPDATE CONFIRM Message that causes invalid configuration

8.3.1.20.1 Definition

8.3.1.20.2 Conformance Requirement

If the UE encounters a CELL UPDATE CONFIRM message that set the variable INVALID_CONFIGURATION to TRUE while executing a cell update procedure, it shall check the current value of its internal counter V302. If V302 is not greater than N302, the UE shall set IE "failure cause" to "invalid configuration", re-transmit a CELL UPDATE message on uplink CCCH, restart T302 timer and increment V302. It shall use the same "Cell Update Cause" as before receiving the erroneous downlink message.

8.3.1.20.3 Test Purpose

To confirm that the UE retransmits a CELL UPDATE message when it receives a CELL UPDATE CONFIRM message that will trigger an invalid configuration in the UE, if the number of retransmissions has not reached the maximum allowed value.

8.3.1.20.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6-12) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is brought to CELL_PCH state at the beginning of the test. SS pages the UE by sending a PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit a CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL UPDATE CONFIRM message which is set to give an invalid configuration. The UE shall re-transmit CELL UPDATE message. SS responds with a valid CELL UPDATE CONFIRM message to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	The UE is in the CELL_PCH state. SS pages for the UE using the allocated connected mode identity (U-RNTI).
2		→	CELL UPDATE	If CELL UPDATE message is received, check that the value "paging response" is set in IE "Cell update cause".
3		←	CELL UPDATE CONFIRM	SS transmits an invalid message.
4		→	CELL UPDATE	IE "failure cause" is set to "invalid configuration"
5		←	CELL UPDATE CONFIRM	

Specific Message Content

CELL UPDATE (Step 2)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE CONFIRM (Step 3)

Use the same message sub-type found in Annex A, with the following exception:

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH info	Not Present

CELL UPDATE (Step 4)

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Paging Response'
Failure cause	Check to see if it is set to 'invalid configuration'

PAGING TYPE 1 (Step 1)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS 34.108 with following exceptions:

Information Element	Value/remark
Page record list - Paging record - CHOICE Used paging identity - U-RNTI - SRNC Identity - S-RNTI	UTRAN identity '0000 0000 0001' '0000 0000 0000 0000 0001'

8.3.1.20.5 Test Requirement

After step 1 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response".

After step 3 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response" and IE "failure cause" set to "invalid configuration".

8.3.1.21 Cell Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

8.3.1.21.1 Definition

8.3.1.21.2 Conformance requirement

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

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, see clause 5.3.4.1.
- The cell is not part of the list of "forbidden LAs for roaming" [9]
- The cell selection criteria are fulfilled, see clause 5.2.3.1.2.

3. The Mobile Equipment shall store a list of "equivalent PLMNs". This list is replaced or deleted at the end of each location update procedure, routing area update procedure and GPRS attach procedure. The stored list consists of a list of equivalent PLMNs as downloaded by the network plus the PLMN code of the network that downloaded the list. The stored list shall not be deleted when the MS is switched off. The stored list shall be deleted if the SIM is removed. The maximum number of possible entries in the stored list is six.

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.

8.3.1.21.3 Test purpose

- 1 To confirm that the UE executes a cell update procedure after a successful reselection of another UTRA cell with a PLMN identity different from the original cell but with a PLMN identity that is part of the equivalent PLMN list in the UE. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

NOTE: Verifies conformance requirement 1, 2 and 3.

- 2 To confirm that the UE refrains from executing a cell update procedure to a better UTRA cell with another PLMN identity when that PLMN identity is not part of the equivalent PLMN list in the UE.

NOTE: Verifies conformance requirement 1, 2 and 3.

NOTE: Test case in 8.3.1.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

8.3.1.21.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.1.1-1, while cell 2 and cell 3 is inactive.

UE: CS-CELL_FACH_Initial (state 6-2) or PS-CELL_FACH_Initial (state 6-4) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3.

Test Procedure

The SS activates Cell 1-3 according table 8.3.1.21-1.

Table 8.3.1.21-1

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		
PLMN identity		PLMN-1			PLMN-2			PLMN-3		
CPICH RSCP (FDD)	dBm	-73	-79	-79	Cell 2 is switched off	-73	-79	Cell 3 is switched off	Cell 3 is switched off	-73
P-CCPCH RSCP (TDD)	dBm	-62	-68	-62	Cell 2 is switched off	-62	-68	Cell 3 is switched off	Cell 3 is switched off	-62

Table 8.3.1.21-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

- a) At T0, the SS activates Cell 1.
- b) At T1, the SS activates Cell 2, and monitors Cell 2 for received messages from UE.
- c) UE re-selects to Cell 2, and sends a CELL UPDATE

d) At T2, the SS activates Cell 3, and monitors Cell 3 for received messages from UE.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				At T0: UE is camped on Cell 1 and registered to PLMN1
2		→	CELL UPDATE	At T1: Sent in Cell 2 The value "cell reselection" set in IE "Cell update cause".
3		←	CELL UPDATE CONFIRM	
4		→	UTRAN MOBILITY INFORMATION CONFIRM	
5				At T2: No message sent by UE

Specific Message Contents

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type titled "CELL UPDATE CONFIRM message" in Annex A with following exceptions:

Information Element	Value/remark
- New C-RNTI	Present
- URA identity	Not present

8.3.1.21.5 Test requirement

The UE shall send a CELL UPDATE at T1 but refrain from sending a cell update (or any other message) after T2.

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, see clause 5.3.4.1.
- The cell is not part of the list of "forbidden LAs for roaming" [9]
- The cell selection criteria are fulfilled, see clause 5.2.3.1.2.

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

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". To confirm that if the UE get a release message and is moved to idle mode, performs a location registration 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 8.3.1.22-4, while cell 2 is inactive.

UE: CS-CELL_FACH_Initial (state 6-2) or PS-CELL_FACH_Initial (state 6-4) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

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.

Test Procedure

Table 8.3.1.22-4

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 RSCP (FDD)	dBm	-73	-79	Cell 2 is switched off	-73
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" and "T2" are 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.
- c) The UE performs a location registration 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 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.

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	The value "Normal event" is set in IE "Release cause"
3		→	RRC CONNECTION RELEASE COMPLETE	
4		→	RRC CONNECTION REQUEST	The value "Registration" is set in IE "Establishment cause"
5		←	RRC CONNECTION SETUP	
6		→	RRC CONNECTION SETUP COMPLETE	
7		→	INITIAL DIRECT TRANSFER	Includes MM message LOCATION UPDATING REQUEST
8		←	DOWNLINK DIRECT TRANSFER	Includes MM message LOCATION UPDATING REJECT with reject cause "Roaming not allowed in this location area"
9		←	RRC CONNECTION RELEASAE	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	
13		→	RRC CONNECTION SETUP COMPLETE	
14		→	INITIAL DIRECT TRANSFER	Includes MM message LOCATION UPDATING REQUEST
15		←	DOWNLINK DIRECT TRANSFER	Includes MM message LOCATION UPDATING ACCEPT

Specific Message Contents

FFS

8.3.1.22.5 Test requirement

The UE shall send a CELL UPDATE in Cell 2 at T1, attempt Location registration in Cell 2, but, since the location registration is rejected in Cell 2, not send any more messages in Cell 2

8.3.1.23 Cell Update: HCS cell reselection in CELL_FACH

8.3.1.23.1 Definition

8.3.1.23.2 Conformance requirement

This procedure is used to update UTRAN with the current cell of the UE after it has performed a cell reselection in CELL_FACH state with HCS parameters applied.

Reference

3GPP TS 25.331 clause 8.3.1.

3GPP TS 25.304 clause 5.2.6.1.4.

3GPP TS 25.304 clause 5.4.3.

8.3.1.23.3 Test purpose

To confirm that the UE can read HCS related SIB information and act upon all HCS parameters. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.23.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 is active with downlink transmission power shown in Column To in Table 8.3.1.21-1. Cell 2 and 3 are switched off.

UE: CS-CELL_FACH_Initial (state 6-2) or PS-CELL_FACH_Initial (state 6-4) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE

Specific Message Content

For system information blocks 3, 4, 11 & 12 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 3 (FDD)

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection_and_reselection_quality_-	CPICH RSCP
- measure	
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 3 (3.84 Mcps TDD and 1.28 Mcps TDD)

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection and reselection quality - measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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 (FDD)

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell_selection_and_reselection_quality_- measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 identity	<u>0000 0000 0000 0000 0000 0000 0001B</u>
- Cell selection and re-selection info	
- Mapping Info	<u>Not present</u>
- Cell selection and reselection quality - measure	<u>(no data)</u>
- CHOICE mode	<u>TDD</u>
- Sintrasearch	<u>10 dB</u>
- Sintersearch	<u>10 dB</u>
- SsearchHCS	<u>47 dB</u>
- RAT List	<u>This parameter is configurable</u>
- RAT identifier	<u>GSM</u>
- Ssearch,RAT	<u>-32 dB</u>
- SHCS,RAT	<u>Not Present</u>
- Slimit,SearchRAT	<u>Not Present</u>
- Qqualmin	<u>-20 dB</u>
- Qrxlevmin	<u>-103 dBm</u>
- Qhyst1s	<u>10 (gives actual value of 20 dB)</u>
- Treselections	<u>0 seconds</u>
- HCS Serving cell information	
-HCS Priority	<u>6</u>
- Q HCS	<u>39 (results in actual value of -76)</u>
- TcrMax	<u>Not Present</u>

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

Information Element	Value/remark
- Measurement control system information	Used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 1)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 1)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality - <u>measure</u>	<u>(no data)</u>
- Intra-frequency measurement system <u>information</u>	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

Test Procedure

Table 8.3.1.21-1

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 RSCP (FDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After PenaltyTime)		15	15	15	-5	-5	9	-5	3	3
R* (After PenaltyTime)		-41	-41	-41	-60	-60	-47	-60	-53	-53
P-CCPCH RSCP (TDD)	dBm	<u>-61</u>	<u>-61</u>	<u>-61</u>	<u>-80</u>	<u>-80</u>	<u>-67</u>	<u>-80</u>	<u>-73</u>	<u>-73</u>
H* (After PenaltyTime)		<u>15</u>	<u>15</u>	<u>15</u>	<u>-4</u>	<u>-4</u>	<u>9</u>	<u>-4</u>	<u>3</u>	<u>3</u>
R* (After PenaltyTime)		<u>-41</u>	<u>-41</u>	<u>-41</u>	<u>-60</u>	<u>-60</u>	<u>-47</u>	<u>-60</u>	<u>-53</u>	<u>-53</u>

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

The UE is in the CELL_FACH state, camping onto cell 1. SS configures Cell 2 and 3 with power levels given in column "T0" and starts to broadcast BCCH on the primary CCPCH in cell 2 & 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 8.3.1.21-1. The UE shall find cell 3 to be more suitable for service and hence perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. After the completion of cell reselection, the UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 3 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. SS verifies that the UE does not send any response to this message. UE shall stay in CELL_FACH state. SS then sets downlink transmission power settings according to columns "T2" in table 8.3.1.21-1. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection to cell 2 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. 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. SS verifies that the UE does not send any response to this message. UE shall stay in CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state in cell 1
2		←	BCCH	SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.1-1. The SS starts to broadcast BCCH on the primary CCPCH in cell 2 and Cell 3. The UE shall find still find Cell 1 best for service even after penalty time of 40 seconds, and shall remain in Cell 1 in CELL_FACH State
3				SS changes the power levels as per column 'T1' in the table 8.3.1.21-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 1 as best for service and remain in cell 1. After Penalty time of 40 Seconds, UE shall find Cell 3 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 3.
4		→	CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause" Received in Cell 3
5		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
6				SS checks the uplink PRACH channel to verify that no response is sent by UE.
7				SS changes the power levels as per column 'T2' in the table 8.3.1.21-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 3 as best for service and remain in cell 3. After Penalty time of 40 Seconds, UE shall find Cell 2 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
8		→	CELL UPDATE	Received in Cell 2
9		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH".
10				SS checks the uplink PRACH channel to verify that no response is sent by UE.

Specific Message Contents

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

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection_and_reselection_quality_measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 3 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2 and 3)

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection and reselection quality - measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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
<u>- Cell identity</u>	<u>0000 0000 0000 0000 0000 0000 0001B</u>
<u>- Cell selection and re-selection info</u>	
<u>- Mapping Info</u>	<u>Not present</u>
<u>- Cell_selection_and_reselection_quality_measure</u>	<u>(no data)</u>
<u>- CHOICE mode</u>	<u>TDD</u>
<u>- Sintrasearch</u>	<u>10 dB</u>
<u>- Sintersearch</u>	<u>10 dB</u>
<u>- SsearchHCS</u>	<u>47 dB</u>
<u>- RAT List</u>	<u>This parameter is configurable</u>
<u>- RAT identifier</u>	<u>GSM</u>
<u>- Ssearch,RAT</u>	<u>-32 dB</u>
<u>- SHCS,RAT</u>	<u>Not Present</u>
<u>- Slimit,SearchRAT</u>	<u>Not Present</u>
<u>- Qqualmin</u>	<u>-20 dB</u>
<u>- Qrxlevmin</u>	<u>-103 dBm</u>
<u>- Qhyst1s</u>	<u>10 (gives actual value of 20 dB)</u>
<u>- Treselections</u>	<u>0 seconds</u>
<u>- HCS Serving cell information</u>	
<u>-HCS Priority</u>	<u>7</u>
<u>- Q HCS</u>	<u>39 (results in actual value of -76)</u>
<u>- TcrMax</u>	<u>Not Present</u>

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

Information Element	Value/remark
- Measurement control system information	used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	-20dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,n}	-20dB
- 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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 2)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality - measure	<u>(no data)</u>
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>6</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

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

Information Element	Value/remark
- Measurement control system information	used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 3)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 3)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality - measure	<u>(no data)</u>
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>6</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

CELL UPDATE

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	In step 4 and 8
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5 and 9)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_FACH

8.3.1.23.5 Test requirement

After step 3 the UE shall reselect to cell 3 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 5 the UE shall not transmit any uplink message in response to the CELL UPDATE CONFIRMATION message received in step 4.

After step 7 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".

After step 9 the UE shall not transmit any uplink message in response to the CELL UPDATE CONFIRMATION message received in step 8.

8.3.1.24 Cell Update: HCS cell reselection in CELL_PCH

8.3.1.24.1 Definition

8.3.1.24.2 Conformance requirement

This procedure is used to update UTRAN with the current cell of the UE after it has performed a cell reselection in CELL_PCH state with HCS parameters applied.

Reference

3GPP TS 25.331 clause 8.3.1.

3GPP TS 25.304 clause 5.2.6.1.4.

3GPP TS 25.304 clause 5.4.3.

8.3.1.24.3 Test purpose

To confirm that the UE can read HCS related SIB information and act upon all HCS parameters. To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. To confirm that the UE sends the correct uplink response message when executing cell update procedure due to cell reselection.

8.3.1.24.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 is active with downlink transmission power shown in Column To in table 8.3.1.21-1. Cell 2 and 3 are switched off.

UE: CELL_PCH (state 6-12) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Specific Message Content

For system information blocks 3, 4, 11 & 12 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 3 (FDD)

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection_and_reselection_quality_- measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 3 \(3.84 Mcps TDD and 1.28 Mcps TDD\)](#)

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection_and_reselection_quality_- measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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 (FDD)

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection and reselection quality - measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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
- Measurement control system information	used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 1)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 1)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality -	<u>(no data)</u>
measure	
- Intra-frequency measurement system	
information	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

Test Procedure

Table 8.3.1.21-1

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 RSCP (FDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After Penalty Time)		15	15	15	-5	-5	9	-5	3	3
R* (After Penalty Time)		-41	-41	-41	-60	-60	-47	-60	-53	-53
P-CCPCH RSCP (TDD)	dBm	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After Penalty Time)		15	15	15	-4	-4	9	-4	3	3
R* (After Penalty Time)		-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 CELL_PCH state, camping onto cell 1. SS configures Cell 2 and 3 with power levels given in column "TO" and starts to broadcast BCCH on the primary CCPCH in cell 2 & 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 8.3.1.22-1. The UE shall find cell 3 to be more suitable for service and hence perform a cell reselection to cell 3 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. After the completion of cell reselection, the UE shall move to CELL_FACH state and transmit a CELL UPDATE message to the SS on the uplink CCCH of cell 3 and set IE "Cell update cause" to "Cell Reselection". After SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "RRC State Indicator" set to "CELL_PCH", to the UE on the downlink DCCH. UE shall return to CELL_PCH state in Cell 3 and will not transmit anything on PRACH. SS then sets downlink transmission power settings according to columns "T2" in table 8.3.1.22-1. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection to cell 2 after at-least 40 Seconds (Penalty Time) after the power levels have been changed. After the completion of cell reselection, the UE shall move to CELL_FACH state and 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_PCH", to the UE on the downlink DCCH. UE shall return to CELL_PCH state in Cell 2 and will not transmit anything on PRACH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_PCH state in cell 1
2		←	BCCH	SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.1-1. The SS starts to broadcast BCCH on the primary CCPCH in cell 2 and Cell 3. The UE shall find still find Cell 1 best for service even after penalty time of 40 seconds, and shall remain in Cell 1 in CELL_PCH State
3				SS changes the power levels as per column 'T1' in the table 8.3.1.21-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 1 as best for service and remain in cell 1. After Penalty time of 40 Seconds, UE shall find Cell 3 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 3.
4		→	CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection". Received in Cell 3
5		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
7				SS changes the power levels as per column 'T2' in the table 8.3.1.21-1. For the time equal to Penalty time 40 Seconds, after the change in power levels, the UE shall still find Cell 3 as best for service and remain in cell 3. After Penalty time of 40 Seconds, UE shall find Cell 2 better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
8		→	CELL UPDATE	The UE moves to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection". Received in Cell 2
9		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".

Specific Message Contents

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

Information Element	Value/remark
- SIB4 indicator	TRUE
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping info	Not Present
- Cell selection_and_reselection_quality_measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 3 \(3.84 Mcps TDD and 1.28 Mcps TDD\) \(Cell 2 and 3\)](#)

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell selection and reselection quality - measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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 (FDD) (Cell 2 and 3)

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	16 dB
- SsearchHCS	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Qhyst2s	0 dB
- Treselections	0 seconds
- 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 identity	0000 0000 0000 0000 0000 0000 0001B
- Cell selection and re-selection info	
- Mapping Info	Not present
- Cell selection and reselection quality - measure	(no data)
- CHOICE mode	TDD
- Sintrasearch	10 dB
- Sintersearch	10 dB
- SsearchHCS	47 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- Slimit,SearchRAT	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-103 dBm
- Qhyst1s	10 (gives actual value of 20 dB)
- Treselections	0 seconds
- 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
- Measurement control system information	used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	-20dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,n}	-20dB
- 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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 2)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 2)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality -	<u>(no data)</u>
measure	
- Intra-frequency measurement system	
information	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>6</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

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

Information Element	Value/remark
- Measurement control system information	used
- Use of HCS	CPICH RSCP
- Cell_selection_and_reselection_quality_measure	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- 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
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	(no data)
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	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	
- Qoffset1 _{s,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	10
- 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	
- Qoffset1 _{s,n}	-20dB
- 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	10
- CHOICE mode	TDD
- Qrxlevmin	-103 dBm

Contents of System Information Block type 12 in connected mode (FDD) (Cell 3)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	used
- Cell_selection_and_reselection_quality_measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1
- Primary CPICH TX power	Not Present
- Read SFN indicator	TRUE
- TX Diversity indicator	FALSE
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	-20 dB
- Qoffset2 _{s,n}	Not Present
- 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	10
- CHOICE mode	FDD
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm

Contents of System Information Block type 12 (3.84 Mcps TDD and 1.28 Mcps TDD) (Cell 3)

Information Element	Value/remark
- Measurement control system information	
- Use of HCS	<u>used</u>
- Cell selection and reselection quality - <u>measure</u>	<u>(no data)</u>
- Intra-frequency measurement system <u>information</u>	
- Intra-frequency measurement identity	<u>1</u>
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	<u>Remove no intra-frequency cells</u>
- New intra-frequency cells	
- Intra-frequency cell id	<u>1</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20 dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>7</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>
- Intra-frequency cell id	<u>2</u>
- Cell info	
- Cell individual offset	<u>0dB</u>
- Reference time difference to cell	<u>Not Present</u>
- CHOICE mode	<u>TDD</u>
- Primary CCPCH info	
- Cell parameters ID	<u>Reference clause 6.1 Default settings for cell</u>
- Primary CCPCH TX power	<u>Not Present</u>
- Timeslot list	<u>Not Present</u>
- Burst type	<u>Not Present</u>
- Cell Selection and Re-selection info	
- Qoffset1 _{s,n}	<u>-20dB</u>
- HCS neighbouring cell information	<u>Present</u>
- HCS Priority	<u>6</u>
-Q HCS	<u>39 (results in actual value of -76)</u>
-HCS Cell Reselection Information	
- Penalty Time	<u>40</u>
-Temporary Offset	<u>10</u>
- CHOICE mode	<u>TDD</u>
- Qrxlevmin	<u>-103 dBm</u>

CELL UPDATE

The same message found in Annex A shall be transmitted by the UE on the uplink CCCH, with the exception of the following IEs:

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	Check to see if set to '0000 0000 0001' In step 4 and 7 Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 5 and 8)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH

8.3.1.24.5 Test requirement

After step 3 the UE shall reselect to cell 3 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 6 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".

CHANGE REQUEST

⌘ **TS 34.123-1 CR 218** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections and updates of test cases for RRC measurements in package 1.		
Source:	⌘ MCI, ASUSTek, Ericsson, Nokia, Siemens (Co-ordinator)		
Work item code:	⌘ TEI	Date:	⌘ 14.05.2002
Category:	⌘ F	Release:	⌘ REL-4
	<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)

Reason for change:	⌘ The test cases for Measurement control and report in 8.4.1.1, 8.4.1.3 and 8.4.1.5, included in package 1, are not always consistent with the core specifications, March 2002, and contain errors.								
Summary of change:	⌘								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #00FFFF;">Fr 2002-05-03 Addition of generic test procedure in existing test cases</td> <td style="text-align: right;">MCI</td> </tr> <tr> <td colspan="2">Reason of change: To check the UE is in the correct state.</td> </tr> <tr> <td colspan="2">Clause 8.4.1.1.4 Method of test</td> </tr> <tr> <td colspan="2">In clause 8.4.1.1, step 15 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.</td> </tr> </table>	Fr 2002-05-03 Addition of generic test procedure in existing test cases	MCI	Reason of change: To check the UE is in the correct state.		Clause 8.4.1.1.4 Method of test		In clause 8.4.1.1, step 15 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.	
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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #FFFF00;">T1S-020144 Correction to the IE "Cells for measurement" in SIB 11/12</td> <td style="text-align: right;">ASUSTek</td> </tr> <tr> <td colspan="2">Already agreed in T1SIG#22</td> </tr> <tr> <td colspan="2">According to 25.331 v3.a.0 section 10.3.7.13, 10.3.7.33 the IE "Cell for measurement" is not needed (also not present in ASN.1) for IE "Inter-frequency cell info list" and "Intra-frequency cell info list" when sent in SIB11/12.</td> </tr> <tr> <td colspan="2">Affected clauses 8.4.1.1, 8.4.1.3 and 8.4.1.5</td> </tr> </table>	T1S-020144 Correction to the IE "Cells for measurement" in SIB 11/12	ASUSTek	Already agreed in T1SIG#22		According to 25.331 v3.a.0 section 10.3.7.13, 10.3.7.33 the IE "Cell for measurement" is not needed (also not present in ASN.1) for IE "Inter-frequency cell info list" and "Intra-frequency cell info list" when sent in SIB11/12.		Affected clauses 8.4.1.1, 8.4.1.3 and 8.4.1.5	
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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #FFFF00;">T1S-020213r1, 8.4.1.1, measurement test cases</td> <td style="text-align: right;">Ericsson</td> </tr> <tr> <td colspan="2">Already agreed in T1SIG#22</td> </tr> <tr> <td colspan="2">The following changes are made:</td> </tr> <tr> <td colspan="2">1) The serving cell (cell 1) is added to SIB11 in step 1, as information related</td> </tr> </table>	T1S-020213r1, 8.4.1.1, measurement test cases	Ericsson	Already agreed in T1SIG#22		The following changes are made:		1) The serving cell (cell 1) is added to SIB11 in step 1, as information related	
T1S-020213r1, 8.4.1.1, measurement test cases	Ericsson								
Already agreed in T1SIG#22									
The following changes are made:									
1) The serving cell (cell 1) is added to SIB11 in step 1, as information related									

to that cell should be broadcast according to 25.331.

- 2) In step 7, not having any intra-frequency cell removed and adding cell 2 which is already stored in the CELL_INFO_LIST variable of the UE (it was broadcast in SIB 11) will not result in any changes. It is therefore proposed to add a third cell, cell 3, to the test, and order the UE to remove all the intra-frequency cells it had previously stored, and to add cell 1 and cell 3. That way, the correct behaviour of the UE regarding the handling of the intra-frequency cell list can really be checked.
- 3) In step 7, it is proposed to also change the quantities that shall be reported by the UE both for the active set cells and for the monitored set cells, so it can be checked that the UE reconfigures also the reporting quantities according to what is ordered by the network.
- 4) It is proposed to add two steps (10a and 10b), to test the correct behaviour of the UE when it is ordered to add intra-frequency cells to its CELL_INFO_LIST variable through a MEASUREMENT CONTROL message with measurement command "modify". The correct handling of such messages is not tested in the current message sequence, while it is quite an essential mechanism to test.
- 5) In steps 7 and 12, the IE "Cells for measurement" is removed since according to the MEASUREMENT CONTROL messages in those steps, the UE will only have one intra-frequency cell stored in its CELL_INFO_LIST variable, so the correct handling of the IE "Cells for measurement" cannot be tested in those messages.
- 6) Several editorial corrections are proposed.

We 2002-05-08, Review comments of TC 8.4.1.1, ASUSTek

8.4.1.1.2 Conformance requirement → similar changed to same

Expected Sequence → inclusion of "in" for step 1

Inclusion and correction of some IEs in System Information Block type 11, MEASUREMENT REPORT (Step 6 and 6a), MEASUREMENT CONTROL (Step 7), MEASUREMENT CONTROL (Step 12)

- According to 25.331 v3.10.0 section 8.6.7.3, the IE "Cells for measurement" is used to indicate that only a subset of the cell list is considered in a particular measurement if it is present, and indicated that the full set of the cell list is considered in a particular measurement if it is not present. Therefore, the IE "Cells for measurement" in MEASUREMENT CONTROL message (Step 7) might be modified to "Not Present" to test the UE would apply the full set, since in this case the full set is also included cell 2 only. And the step 12 might not be modified to test the case that UE would read this IE "Cells for measurement" and act per this IE.
- As specified in 25.331 section 8.6.7.7 that "if the IE "Cell Identity reporting indicator" is set to TRUE, the UE shall in this version of the specification treat the IE as if the IE "Cell Identity reporting indicator" is set to FALSE". Therefore, the IE "Cell Identity reporting indicator" should be modified to "FALSE" to avoid ambiguity and make this test case more easy to read.
- Some editorial corrections

Th 2002-05-08, Review comments of TC 8.4.1.3, ASUSTek

Expected Sequence → inclusion of "in" for step 1

Inclusion and correction of some IEs in System Information Block type 11, CELL UPDATE (Step 7)

We 2002-05-08, Review comments of TC 8.4.1.1, ASUSTek

Small comment to TC 8.4.1.1: Change the Value/Remarks of CPICH RSCP in MEASUREMENT REPORT (Step 6 and 6a) message from "Check to see if this IE is present" to "Checked to see if set to within an acceptable range" like TC 8.4.1.3 step 7.

Th 2002-05-09, RRC_WSP1_TC8.4.1.5, MCI

1) In test procedure section,

"At the same time, reporting of cell 2's CPICH RSCP is commanded with the reporting criteria set to

"periodic reporting" and "reporting interval" set to 16 seconds."

should be changed to

"At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds."

2) In step 5 of the expected sequence,

The remark should be revised as follows:

"SS requests for measurement of cell 2's CPICH RSCP value and the reporting of CPICH RSCP values of

active set cells and monitored set cells."

/* 3) In step 15 of the expected sequence,

The remark should be removed.

The arrow is in the wrong direction. */

4) In the test requirement, the following sentence should be added to the end of the last paragraph:

"The message shall contain IE "measured result" to report CPICH RSCP values of cell 1, 2 and 3."

This is because in step 9, IE "Reporting cell status" is set to "Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency".

Th 2002-05-09, RRC-P1-<TC 8.4.1.5> Review comments of TC 8.4.1.5 ASUSTek

8.4.1.5.2 Conformance requirement, 8.4.1.5.3 Test Purpose, Test Procedure, Expected Sequence

"intra-frequency cell info list" specified.

Test Procedure:

The sentence, "SS shall receive the MEASUREMENT REPORT messages

with IE "Event results" at 8 seconds interval", in the bottom of Test Procedure, is wrong. It could be modified to like "SS verifies that the received MEASUREMENT REPORT message included the cell 1, 2 and 3's CPICH RSCP value in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results"".

/* Remarks for step 15

UE shall report cell 1, 2 and 3's CPICH RSCP value in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results".

Inclusion and correction of some IEs in System Information Block type 11, MEASUREMENT CONTROL (Step 5), System Information Block type 12 (Step 9), CELL UPDATE (Step 11) */

Tu 2002-05-14, RRC-P1-<TC 8.4.1.3, 8.4.1.5> T1S-020309

Ericsson

The following corrections are proposed to section 8.4.1.3:

- 1) In the table, the value to apply for cell 2 is changed from -70 dB to -61 dB to make the table consistent with the change proposed for the reporting range (see below, change number 8) and to make it possible to use a realistic value for that parameter.
- 2) The text in test procedure indicates that the measurement defined in SIB11 is a periodical one, which is inconsistent with the content of the messages defined for the test case. This is corrected.
- 3) In SIB11: the serving cell (that is cell 1 in the test case) shall be included among the cells in intra-frequency cell info list.
- 4) In SIB11: for cell 2, the IE reference time difference to cell is not needed, since that IE is only used for TDD.
- 5) In SIB11: the Read SFN indicator is set to TRUE for that cell, and the Cell synchronisation reporting indicator is set to TRUE for the monitored set cells, since that is the most likely scenario.
- 6) In SIB11: the IE Periodic Reporting/Event Trigger Reporting Mode shall be set to Event-trigger reporting since this is what is defined in the rest of the SIB.
- 7) In SIB11: the Triggering condition 2 shall be set to Monitored set cells, since a cell that triggers event 1a is typically a cell that will be added to the active set.
- 8) In SIB11: the Reporting range constant is currently 920 dB! This is corrected, and the value 3 dB is now used.
- 9) In SIB11: the threshold used frequency IE shall not be present when defining event 1a.
- 10) In SIB11: the time to trigger is changed from 0 to 60 ms, since having time to trigger equal to 0 is an unrealistic setting (each peak due to the varying radio conditions would generate a measurement report, which is not the desired behavior)
- 11) In the CELL UPDATE message: the Cell update cause should be "Periodical cell update", and not "Periodic cell updating".
- 12) In the MEASUREMENT REPORT message: the group of IEs "intra-frequency measurement results" shall be "Intra-frequency measured results list".
- 13) In the MEASUREMENT REPORT message: the Cell synchronisation information shall be reported for cell 2, according to the changes made in 5.

14) In the MEASUREMENT REPORT message: the measured results shall also be included for cell 1, since the Reporting cell status in SIB11 indicates that 2 cells shall be reported at the maximum, and that the reported cell can either be from the active set or from the monitored set.

The following corrections are proposed to section 8.4.1.3:

- 15) Several editorial changes are made to the method of test and conformance requirement sub-sections.
- 16) In the method of test sub-section: it is proposed to change the reporting interval from 8 seconds to 500 ms, since long reporting intervals are tested in other test cases, while short ones are not.
- 17) Several editorial changes are made in the table describing the Expected sequence. It is also indicated in step 9 that SIB11 is modified in order to indicate that SIB12 is now broadcast, and to include cell 2 as a neighbor cell (see 20)
- 18) In SIB11(step 1): cell 1 shall be included, since it is the serving cell.
- 19) In the MEASUREMENT CONTROL message: the reference time difference to cell is not needed for cell 2, since this is a TDD IE.
- 20) In step 9, SIB 11 needs to be modified to set the SIB12 indicator to TRUE. Also, cell 2 needs to be included among the intra-frequency cell info list, since otherwise the UE will not have it in its CELL_INFO_LIST variable, and would not report it in the MEASUREMENT REPORT of step 15, as it is the case in this test case.
- 21) In SIB12: the IE reference time difference to cell is not needed for cell 3, since this is a TDD IE.
- 22) In SIB12: the time to trigger IE is changed from 0 to 60 ms, see motivation in step 10.
- 23) The reporting interval is changed from 8 seconds to 500 ms, since such short reporting interval have not been tested in other test cases.
- 24) According to the current settings, the "Cell synchronisation information" shall be reported by the UE for the active set cells, and not for the monitored set cells. It is proposed to have the contrary configured, since getting the cell synchronisation information is mainly useful for the monitored cells (when such a cell needs to be added to the active set of the UE), while it does not seem that useful to get it for a cell in the active set.

Nokia's comment received after discussion of T1-020093 in Sophia

In table 8.4.1.5-1, the value of cell 2 in T0 should be set to 75 to keep the measurement accuracy.

Replacing of Annex A references for [9] (TS.34.108) clause 9.

[In revision 3:](#)

[8.4.1.5 Conformance requirements are updated according to Task Force comments](#)

[Proposals decided:](#)

- [Test Procedure, 2 proposals → Both merged](#)

- [Expected Sequence, 3 proposals → Finally it was decided to include only in the comment 500 milliseconds interval.](#)

Consequences if not approved:	⌘ The test cases are incomplete.									
Clauses affected:	⌘ 8.4.1.1, 8.4.1.3, 8.4.1.5									
Other specs affected:	<table border="0"> <tr> <td>⌘ <input type="checkbox"/></td> <td>Other core specifications</td> <td>⌘</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td>O&M Specifications</td> <td></td> </tr> </table>	⌘ <input type="checkbox"/>	Other core specifications	⌘	<input checked="" type="checkbox"/>	Test specifications		<input type="checkbox"/>	O&M Specifications	
⌘ <input type="checkbox"/>	Other core specifications	⌘								
<input checked="" type="checkbox"/>	Test specifications									
<input type="checkbox"/>	O&M Specifications									
Other comments:	<p>⌘ This CR impacts both Release-99 and Release-4.</p> <p>Some rules for merged CR as coordinator are applied:</p> <ul style="list-style-type: none"> - The different contributions are marked in different colours, to clarify the sources. - Some proposals are incompatible. These situations are marked in the text between /*...*/, and the different suggestions are numbered as proposal x (author). <p style="margin-left: 40px;">8.4.1.5.4 Method of test</p> <ul style="list-style-type: none"> - Test Procedure, 2 proposals - Expected Sequence, 3 proposals - After Adhoc meeting on Monday 20th May, the final version of the CR will be created as revision 1 only including the changes to be applied (without marked colour text and proposals rejected) 									

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 Measurement procedure

8.4.1 Measurement Control and Report

8.4.1.1 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_DCH state

8.4.1.1.1 Definition

8.4.1.1.2 Conformance requirement

Upon a state transition from idle mode to CELL_DCH state, the UE shall begin or continue to monitor the list of cells assigned in the IE "intra-frequency cell info list" which is specified in System Information Block type 11 or 12 messages on BCCH. When entering CELL_DCH state, the UE shall send MEASUREMENT REPORT message(s) when the condition(s) in "intra-frequency measurement reporting criteria" IE received are fulfilled. In CELL_DCH state, if the UE receives a MEASUREMENT CONTROL message, which contains a "measurement identity" IE ~~similar with the same value as in value to~~ the "intra-frequency measurement identity" in System Information Block Type 11 or 12 message, it shall terminate existing monitoring activities for the neighbouring cells previously known from System Information Block type 11 or 12 messages. It shall perform the measurement and reporting tasks based on the latest MEASUREMENT CONTROL message received.

Reference

3GPP TS 25.331 clause 8.4.1.8.1, 8.4.1.3

8.4.1.1.3 Test Purpose

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). 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" 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	-80	-60	-60	-80	-80

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 to prevent reporting of "Cell synchronisation information" and also to include cell 2 into the monitored neighbour cell list. The key measurement parameters in the modified System Information Block message are as follow: measurement type = "intra-frequency measurement", measurement quantity = "CPICH RSCP", 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.

SS sends a MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS ~~configures~~ ~~assigns~~ an intra-frequency measurement ~~type with the~~ based on the measurement quantity ~~based on cell 2's CPICH RSCP value~~. Parameters used in this message are: measurement identity = "1", report criteria = "event-trigger", event identity = "1f", 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~~ 2 has ~~reached~~ dropped below the threshold value specified in the previous MEASUREMENT CONTROL message.

SS sends then a new MEASUREMENT CONTROL message to add cells 1 and 2 to the list of the cells the UE shall measure. Since the RSCP for cell 2 is below the threshold for event 1f 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 ~~assigns~~ ~~configures~~ an intra-frequency measurement based on the ~~type with the~~ measurement quantity ~~based on cell 2's CPICH RSCP value~~. Parameters used in this message are: measurement identity = "1", report criteria = "event-trigger", event identity = "1B", Reporting range 8db. SS reconfigures the downlink transmission power settings according to values in column "T0" in table 8.4.1.1-1. The UE shall transmit a MEASUREMENT REPORT message when it detects that the condition for event 1b 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 <u>in</u> 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.	

Step	Direction		Message	Comment
	UE	SS		
4	↔		SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
5	→		Void	
6	→		MEASUREMENT REPORT	SS waits 64 seconds
6a	→		MEASUREMENT REPORT	SS shall receive consecutive MEASUREMENT REPORT messages at 64 seconds interval.
7	←		MEASUREMENT CONTROL	A measurement with "measurement identity" IE set to "1" is assigned, with the IE "CHOICE reporting criteria" set to "intra-frequency measurement reporting criteria". See specific message content for the rest of the message.
8				SS waits for 64 seconds and verifies that no further MEASUREMENT REPORT messages are detected on the uplink DCCH.
9				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.1-1.
10	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 3 and containing report the measured CPICH RSCP value of cell 3 .
10a	←		MEASUREMENT CONTROL	A MEASUREMENT CONTROL is sent to the UE to modify the list of the cells the UE shall monitor.
10b	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message triggered by cell 2.
11				SS re-adjusts the downlink transmission power settings according to columns "T 2 4" 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 "T 0 4" in table 8.4.1.1-3 and awaits 5 seconds.
14	→		MEASUREMENT REPORT	SS verifies that UE transmits a MEASUREMENT REPORT message to report occurrence of event 1b.

Step	Direction		Message	Comment
	UE	SS		
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)

Information Element	Value/Remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	1
- Intra-frequency cell info 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	TRUE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection	Not Present
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	256 chips
- Read SFN Indicator	FALSE TRUE
- 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	
- Qoffset _{1,s,n}	Not Present (Default is 0dB)
- Qoffset _{2,s,n}	Not Present
- Maximum allowed UL TX power	+33dBm
- HCS neighbouring cell information	Not Present
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement 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	
- SFN-SFN observed time difference reporting indicator	No report
- 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	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE FALSE
- CPICH Ec/No reporting indicator	FALSE

- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64 seconds
- 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

MEASUREMENT REPORT (Step 6 and 6a)

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 it is absent
- SFN-SFN observed time difference	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 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	Acknowledged Mode RLC
- Measurement Reporting Transfer Mode	Event Trigger
- Periodic Reporting / Event Trigger Reporting Mode	
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove all no intra-frequency cells
- New intra-frequency info-list cells	2 new intra-frequency cells
- Intra-frequency cell id	3 2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	256 chips
- Read SFN Indicator	FALSE TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	Not Present
- Read SFN Indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not Present
- Intra-frequency cell id	Set to id of cell 2
- 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	Same as in default message content
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE TRUE
- CPICH RSCP reporting indicator	FALSE TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE TRUE
- Cell identity reporting indicator	TRUE FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not Present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	
- Triggering condition 1	1f
- Triggering condition 2	Monitored set cells
- Reporting range	Not Present

Information Element	Value/Remark
- Cells forbidden to affect reporting range	Not Present
- W	Not Present
- Hysteresis	Not Present
- Threshold used frequency	1 dB
- Reporting deactivation threshold	-70 dBm
- Replacement activation threshold	Not Present
- Time to trigger	Not Present
- Amount of reporting	0 msec
- 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	3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 10)

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	Check to see if measurement results for 2 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 this IE is absent Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it's the same code for cell 1
- SFN-SFN observed time difference	Check to see if this IE is present
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	Check to see if this IE is absent
- Primary Scrambling Code	(for cell 3)
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent present and that the COUNT-C-SFN frame difference is included in it.
- Cell measured results	
- Cell Identity	Check to see if it's the same code for cell 3
- SFN-SFN observed time difference	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is present
- Primary CPICH Info	Check to see if this IE is absent
- Primary Scrambling Code	Check to see if this IE is absent
- 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
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 "1f"
- 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)

<u>Information Element</u>	<u>Value/Remark</u>
<u>Measurement Identity</u>	<u>1</u>
<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 measurement type</u>	<u>Intra-frequency measurement</u>
- <u>Intra-frequency cell info list</u>	
- <u>CHOICE intra-frequency cell removal</u>	<u>Remove no intra-frequency cells</u>
- <u>New intra-frequency info list</u>	<u>1 new intra-frequency cells</u>
- <u>Intra-frequency cell id</u>	<u>2</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</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>FDD</u>
- <u>Primary CPICH Info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 2</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- <u>Cell for measurement</u>	<u>Not Present</u>
- <u>Intra-frequency measurement quantity</u>	<u>Not Present</u>
- <u>Intra-frequency reporting quantity</u>	<u>Not Present</u>
- <u>Reporting cell status</u>	<u>Not Present</u>
- <u>Measurement validity</u>	<u>Not Present</u>
- <u>CHOICE report criteria</u>	<u>Not Present</u>

MEASUREMENT REPORT (Step 10b)

<u>Information Element</u>	<u>Value/Remarks</u>
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<p><u>Measurement identity</u> <u>Measured Results</u> - <u>CHOICE measurement</u></p> <p>- <u>Intra-frequency measurement results</u></p> <p>- <u>Cell measured results</u> - <u>Cell Identity</u> - <u>SFN-SFN observed time difference</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></p> <p>- <u>Cell measured results</u> - <u>Cell Identity</u> - <u>SFN-SFN observed time difference</u> - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH Info</u> - <u>Primary Scrambling Code</u> - <u>CPICH Ec/No</u> - <u>CPICH RSCP</u> - <u>Pathloss</u></p> <p>- <u>Cell measured results</u> - <u>Cell Identity</u> - <u>SFN-SFN observed time difference</u> - <u>Cell synchronisation information</u></p> <p>- <u>Primary CPICH Info</u> - <u>Primary Scrambling Code</u> - <u>CPICH Ec/No</u> - <u>CPICH RSCP</u> - <u>Pathloss</u></p> <p><u>Measured Results on RACH</u> <u>Additional Measured Results</u></p> <p><u>Event Results</u> - <u>CHOICE event result</u></p> <p>- <u>Intra-frequency event identity</u> - <u>Cell measured event results</u> - <u>CHOICE mode</u> - <u>Primary CPICH info</u> - <u>Primary Scrambling Code</u></p>	<p><u>Check to see if set to 1</u></p> <p><u>Check to see if set to "Intra-frequency measured results list"</u> <u>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)</u> <u>Check to see if it is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u></p> <p><u>Check to see if it's the same code for cell 1</u> <u>Check to see if this IE is present</u> <u>Check to see if this IE is present</u> <u>Check to see if this IE is absent</u></p> <p><u>(for cell 2)</u> <u>Check to see if it is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.</u></p> <p><u>Check to see if it's the same code for cell 2</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></p> <p><u>(for cell 3)</u> <u>Check to see if it is absent</u> <u>Check to see if this IE is absent</u> <u>Check to see if this IE is present and that the COUNT-C-SFN frame difference is included in it.</u></p> <p><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></p> <p><u>Check to see if this IE is absent</u> <u>Check to see if this IE is absent</u></p> <p><u>Check to see if this IE is set to "Intra-frequency measurement event results"</u> <u>Check to see if this IE is set to "1f"</u></p> <p><u>Check to see if this IE is set to "FDD"</u></p> <p><u>Check to see if it's the same code for cell 2</u></p>
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MEASUREMENT CONTROL (Step 12)

Information Element	Value/Remark
Measurement Identity	1
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	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Remove all <u>no</u> intra-frequency cells
- CHOICE intra-frequency cell removal	<u>2 new intra-frequency cells</u>
- New intra-frequency info-list <u>cells</u>	<u>1</u>
- <u>Intra-frequency cell id</u>	
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</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>FDD</u>
- <u>Primary CPICH Info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 1</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	256 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	<u>Not Present</u>
- Intra-frequency cell id	Set to id of cell 2
- Intra-frequency measurement quantity	
- Filter Coefficient	<u>Not Present (Default is 0)</u>
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	Same as in default message content
- SFN-SFN observed time difference reporting indicator	No report
- 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	
- SFN-SFN observed time difference reporting indicator	No report
- 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	1b
- Triggering condition 1	Monitored Cells
- Triggering condition 2	Not Present
- Reporting range	8 dB

Information Element	Value/Remark
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Time to trigger	5000 msec
- Amount of reporting	Not Present
- Reporting interval	Not Present
- Reporting cell status	Not Present
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 14)

Information Element	Value/Remarks
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 "1b"
- 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 2 has dropped below 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 '1f' 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 dropped below the threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 7. 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. -

~~In step 12 SS transmits a new Measurement Control message. In the following After step 13,~~ the UE shall transmit a MEASUREMENT REPORT message ~~depending on the re-adjustment of CPICH downlink transmission power in both cells~~ containing IE "Event results", indicating the triggering of event '1b' by cell 2. The MEASUREMENT REPORT message shall not contain any measured results.

8.4.1.3 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_FACH state

8.4.1.3.1 Definition

8.4.1.3.2 Conformance requirement

The UE shall begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 11 or 12 messages, upon a transition from idle mode to CELL_FACH state. If IE "intra-frequency measurement reporting criteria" is specified in System Information Block Type 11 or 12 messages, the UE shall store this information and shall apply these reporting rules in a subsequent transition to CELL_DCH state. If the UE receives IE "Intra-frequency reporting for RACH reporting" and IE "Maximum number of Reported cells on RACH" in System Information Block type 11 or 12 messages, the UE shall use these measurement information and report the measured results when sending messages on RACH.

Reference

3GPP TS 25.331, clause 8.4.1.9.1, 8.4.1.7.1

8.4.1.3.3 Test Purpose

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. 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. 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.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.3-1 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	-70

The UE is initially ~~in~~at idle mode and ~~camps on has selected~~ cell 1 ~~for camping~~. The System Information Block type 11 ~~messages~~ are modified ~~compared with respect~~ to the default settings to prevent reporting of "Cell synchronisation information" and also to include cell 2 into the IE "intra-frequency cell info list". The key measurement parameters are as follow: measurement type = "intra-frequency measurement", measurement quantity = "CPICH RSCP", ~~reporting mode criteria~~ = "~~periodic event~~ reporting ~~criteria~~", ~~reporting interval~~ = "~~12 seconds~~". 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 measurement reading of~~ the measured value of cell 1's CPICH RSCP ~~values~~ 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 broadcasted 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 <u>in</u> idle mode and campse 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 P6 (clause 7.4.2.2.2) 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 readings of <u>measured</u> 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 <u>the one that is broadcast for use in CELL_DCH in SIB11 in step 1.</u> measurement contexts transmitted on BCCH in step 4

Specific Message Content

System Information Block type 1 (Step 1)

Information Element	Value/Remarks
UE Timers and constants in connected mode - T305	5 minutes.

System Information Block type 11 (Step 1)

Information Element	Value/Remark
SIB12 indicator	FALSE
FACH measurement occasion info	<u>Not Present</u>
FACH Measurement occasion cycle length coefficient	2
Inter frequency FDD measurement indicator	FALSE
Inter frequency TDD measurement indicator	FALSE
Inter RAT measurement indicators	Not Present
Measurement control system information	
- <u>Use of HCS</u>	<u>Not used</u>
- <u>Cell selection and reselection quality measure</u>	<u>CPICH RSCP</u>
- 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 info-list cells	
- <u>Intra-frequency cell id</u>	<u>1</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</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>FDD</u>
- <u>Primary CPICH Info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 1</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- <u>Cell selection and Re-selection info</u>	<u>Not present</u>
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0-chips <u>Not Present</u>
- Read SFN Indicator	FALSE <u>TRUE</u>
- 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	
- Qoffset _{1s,n}	<u>Not Present (Default is 0 dB)</u>
- <u>Qoffset_{1s,n}</u>	<u>Not Present</u>
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- Qqualmin	-20dB
- Qrxlevmin	-115dBm
Cells for measurement	Not Present
- Intra-frequency Measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- SFN-SFN observed time difference reporting indicator	No report
- 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	

Information Element	Value/Remark
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE <u>TRUE</u>
- Cell identity reporting indicator	<u>TRUE</u> 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
- Periodic Reporting/Event Trigger Reporting Mode	Periodic Reporting <u>Event trigger</u>
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each event	1a
- Intra-frequency event identity	Not Present
- Triggering condition 1	Active <u>Monitored</u> set cells
- Triggering condition 2	920.0 <u>15</u> -dB
- Reporting Range Constant	Not Present
- Cells forbidden to affect reporting range	FDD
CHOICE mode	Set to same code as used for cell 2
Primary CPICH info	0.0
Primary Scrambling Code	1.0 dB
- W	-85 dBm <u>Not Present</u>
- Hysteresis	0
- Threshold used frequency	Not Present
- Reporting deactivation threshold	0ms <u>60 ms</u>
- Replacement activation threshold	Infinity
- Time to trigger	16 seconds
- Amount of reporting	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Reporting interval	2
- Reporting Cell Status	Not Present
- CHOICE reported cell	Not Present
- Maximum number of reported cells	Not Present
- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

CELL UPDATE (Step 7)

Information Element	Value/Remarks
U-RNTI	Check to see if set to same U-RNTI value assigned in the execution of procedure P6.
<u>START list</u>	<u>Checked to see if this IE is present</u>
<u>AM_RLC error indication(RB2, RB3 or RB4)</u>	<u>FALSE</u>
<u>AM_RLC error indication(RB>4)</u>	<u>FALSE</u>
Cell update cause	Check to see if set to 'Periodical' cell update
Protocol error indicator <u>Failure cause</u>	ing'
Measured results on RACH	Check to see if set to 'FALSE' <u>this IE is absent</u>
- 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	Check to see if set to 'FALSE'
Protocol error information	

PHYSICAL CHANNEL RECONFIGURATION (Step 9)

Use the same message sub-type found in [Annex A\[9\] \(TS-34.108\) clause 9](#), which is entitled "Packet to CELL_DCH from CELL_FACH".

MEASUREMENT REPORT (Step 11)

Information Element	Value/Remarks
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
- SFN-SFN observed time difference	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent present and if the reported cell synchronisation information is correct
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if this IE 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
- Primary Scrambling Code	Check to see if this IE is absent
- 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
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 updating". 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.

8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.5.1 Definition

8.4.1.5.2 Conformance requirement

~~After entering CELL_FACH state from CELL_DCH state, the UE shall stop intra frequency type measurement reporting assigned in a MEASUREMENT CONTROL message. After transition to CELL_FACH state, the UE shall start to monitor cells listed in the IE "intra frequency cell info" received in System Information Block type 11 or 12. If no intra frequency measurements applicable to CELL_DCH are stored in the UE, and that the UE receives "intra frequency reporting criteria" IE in System Information Block type 11 or 12 messages received whilst in CELL_FACH state, it shall apply these reporting criteria after a subsequent return to CELL_DCH state. If the UE receives the IE "Intra frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block Type 11 or 12 during a transition from CELL_DCH to CELL_FACH, the UE shall append the measured results when transmitting uplink RACH messages.~~

Upon transition from CELL_DCH to CELL_FACH/CELL_PCH/URA_PCH state, the UE shall:

1> stop intra-frequency type measurement reporting;

1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or

1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

1> if the transition is not due to a reconfiguration message:

2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT_IDENTITY.

1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331).

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;

1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH:

2> resume the measurement reporting.

1> if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);

2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11 in [8] TS 25.331);

3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

Reference

3GPP TS 25.331, clause 8.4.1.6.1, 8.4.1.7.1

8.4.1.5.3 Test Purpose

To confirm that the UE stops performing intra-frequency measurement reporting specified in a MEASUREMENT CONTROL message, when it moves from CELL_DCH state to CELL_FACH state. To confirm that the UE reads the System Information Block type 11 or 12 messages when it enters CELL_FACH state from CELL_DCH state, and starts to monitor the cells listed in the IE "intra-frequency cell info [list](#)". To confirm that the UE performs measurements on uplink RACH transmissions and appends the measured results in RACH messages, when it receives IE "intra-frequency reporting quantity for RACH reporting" and IE "Maximum number of reported cells on RACH" in the System Information Block type 11 or 12 messages. To confirm that the UE applies the reporting criteria in IE "intra-frequency reporting criteria" in System Information Block Type 11 or 12 messages following a state transition from CELL_FACH to CELL_DCH, if no intra-frequency measurements applicable to CELL_DCH are stored.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1 and cell 2 are active, while cell 3 is switched off..

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 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-60	-80 -75	-85	-122	-70

The UE is initially in CELL_DCH state. The System Information Block type 11 message is modified ~~with respect compared~~ to the default message contents, in order to prevent the reporting of "Cell synchronisation information". No measurement ~~to be applied by the UE in CELL_DCH state requirements are is~~ specified ~~for the UE~~ in any of the System Information Block type 11 or 12 messages.

SS sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement ~~task~~ for the measurement of cell 2's CPICH RSCP. ~~At the same time, reporting of cell 2's CPICH RSCP is commanded with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds.~~ ~~At the same time, reporting of CPICH RSCP values of active set cells and monitored set cells are requested with the reporting criteria set to "periodic reporting" and "reporting interval" set to 16 seconds.~~ The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.

SS transmits PHYSICAL CHANNEL RECONFIGURATION message ~~to move the UE to CELL_FACH, and configures RACH and FACH channels in the uplink and downlink directions respectively~~. After receiving this message, the UE shall reconfigure itself and reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. ~~SS acknowledges this message and the UE shall move to CELL_FACH state~~. SS monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. SS transmits System Information Block type 12 messages in cell 1, which include cell 3 into the IE "intra-frequency cell info list" and modifies SIB11 to indicate that SIB12 is now being broadcast. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in the System Information Type 12 messages. Event type 1a reporting criterion is specified for intra-frequency measurements. SS transmit SYSTEM INFORMATION CHANGE INDICATION message to UE. SS waits until T305 has expired. The UE shall respond with a CELL UPDATE message, which comprises IE "Measured results on RACH" to report the readings of CPICH RSCP for cell 1 and cell 3. SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change the physical resources nor allocate any new RNTI identities. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, and configures dedicated physical channel for both uplink and downlink directions. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages.

SS shall receive the MEASUREMENT REPORT messages ~~with IE "Event results"~~ at 8500 milliseconds interval.

SS verifies that it includes CPICH RSCP values of the cells 1, 2 and 3 in IE "Cell measured results" and the triggering of event '1a' on cell 3 in IE "Event results"

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	Master Information Block System Information Block type 11	UE is in CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1. System Information Block Type 11 to be broadcasted does not specify any measurement type to be configured in <u>the UE in CELL_DCH.</u>
2			Void	
3			Void	
4			Void	
5		←	MEASUREMENT CONTROL	SS requests for measurement <u>of cell 2's CPICH RSCP value</u> and reporting of cell 2's CPICH RSCP values <u>of active cells and monitored set cells.</u>
6		→	MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval.
7		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures common physical channels. <u>moves the UE to CELL_FACH state</u>
8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move reconfigure its uplink channel to RACH and downlink channel to FACH, <u>before transiting to CELL_FACH state.</u>
9		←	Master Information Block System Information Block type 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. <u>SIB 11 is modified to indicate that SIB12 is now broadcast and to add cell 2 as a neighbour cell.</u> SIB type -12 indicates that cell 3 is included in the IE "intra-frequency cell info list". SS waits for 1 minute and verifies that no MEASUREMENT REPORT messages are detected on the uplink.

Step	Direction		Message	Comment
	UE	SS		
10	←		SYSTEM INFORMATION CHANGE INDICATION	SS waits until T305 has expired.
11	→		CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 present in this message.
12	←		CELL UPDATE CONFIRM	No changes in physical resource allocation and RNTI identities.
13	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15	↔		MEASUREMENT REPORT	<u>Repeated at 500 milliseconds interval</u> UE shall report cell 2's CPICH RSCP value in IE "Cell measured results" and the triggering of event "1a" in IE "Event results".

Specific Message Content

MASTER INFORMATION BLOCK (Step 1)

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

Information Element	Value/Remarks
MIB Value Tag	1

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 RSCP
- Intra-frequency measurement system information	Not Present
- Intra-frequency measurement identity	Not present
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency 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	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
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- 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
- UE internal measurement system information	Not Present

MEASUREMENT CONTROL (Step 5)

Information Element	Value/Remark
Measurement Identity	5
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	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	0 chips Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	Not Present
- Intra-frequency cell id	2
- 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	
- SFN-SFN observed time difference reporting indicator	No report
- 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	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	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 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	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 result list	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in [Annex A\[9\] \(TS-34.108\) clause 9](#), which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)"

MASTER INFORMATION BLOCK (Step 9)

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

Information Element	Value/Remarks
MIB Value Tag	2

[System Information Block type 11 \(Step 9\)](#)

<u>Information Element</u>	<u>Value/Remark</u>
<u>SIB12 indicator</u>	<u>TRUE</u>
<u>FACH measurement occasion info</u>	<u>Not Present</u>
<u>Measurement control system information</u>	
- <u>Intra-frequency measurement system information</u>	
- <u>Intra-frequency measurement identity</u>	<u>Not present</u>
- <u>Intra-frequency cell info list</u>	
- <u>CHOICE intra-frequency cell removal</u>	<u>Remove no intra-frequency cells</u>
- <u>New intra-frequency info list</u>	
- <u>Intra-frequency cell id</u>	<u>1</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</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>FDD</u>
- <u>Primary CPICH Info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 1</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- <u>Cell selection and Re-selection info</u>	<u>Not present</u>
- <u>Intra-frequency cell id</u>	<u>2</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0 dB</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>FDD</u>
- <u>Primary CPICH Info</u>	
- <u>Primary Scrambling Code</u>	<u>Set to same code as used for cell 2</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity Indicator</u>	<u>FALSE</u>
- <u>Cell selection and Re-selection info</u>	
- <u>Qoffset_{s,n}</u>	<u>0 dB</u>
- <u>Maximum allowed UL TX power</u>	<u>0 dBm</u>
- <u>HCS neighbouring cell information</u>	<u>Not Present</u>
- <u>Qqualmin</u>	<u>-20dB</u>
- <u>Qrxlevmin</u>	<u>-115dBm</u>
- <u>Cells for measurement</u>	<u>Not Present</u>
- <u>Intra-frequency measurement quantity</u>	<u>Not Present</u>
- <u>Intra-frequency reporting quantity for RACH reporting</u>	<u>Not Present</u>
- <u>Maximum number of reported cells on RACH</u>	<u>Not Present</u>
- <u>Reporting information for state CELL_DCH</u>	<u>Not Present</u>
- <u>Inter-frequency measurement system information</u>	<u>Not Present</u>
- <u>Inter-RAT measurement system information</u>	<u>Not Present</u>
- <u>Traffic volume measurement system information</u>	<u>Not Present</u>
- <u>UE internal measurement system information</u>	<u>Not Present</u>

System Information Block type 12 (Step 9)

Information Element	Value/Remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell selection and reselection quality measure	CPICH RSCP
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	6
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info-list cells	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips Not Present
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	
- Qoffset _{s,n}	0dB
- Maximum allowed UL TX power	0dBm
- HCS neighbouring cell information	Not Present
- Qqualmin, Qrxlevmin	-20dB, -115dBm
- Cells for measurement	Not Present
- Intra-frequency measurement quantity	
- Filter Coefficient	Not Present (Default is 0)
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	Current cell + best neighbour
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	TRUE FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameter required for each event	
- Intra-frequency event identity	1a
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting range constant	20.0 dB
- Cells forbidden to affect reporting	Not present
- W	0.0

Information Element	Value/Remark
- Hysteresis	1.0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	7
- Replacement activation threshold	Not Present
- Time to trigger	9 60 ms
- Amount of reporting	Infinity
- Reporting Interval	8 500 milli-seconds
- Reporting cell status	
- <u>CHOICE reported cell</u>	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	3
- 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

SYSTEM INFORMATION CHANGE INDICATION (Step 10)

Information Element	Value/Remarks
BCCH modification info - MIB Value tag	2

CELL UPDATE (Step 11)

Information Element	Value/Remarks
U-RNTI	Check to see if set to the same value assigned during the execution of procedure P3 or P5.
<u>START list</u>	<u>Checked to see if this IE is present</u>
<u>AM_RLC error indication(RB2, RB3 or RB4)</u>	<u>FALSE</u>
<u>AM_RLC error indication(RB>4)</u>	<u>FALSE</u>
Cell update cause	Check to see if it is set to "Periodical cell update"
Protocol error info <u>Failure cause</u>	Check to see if it is absent or set to FALSE
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
- Measurement results for monitored cells	
- SFN-SFN observed time difference	Not Checked
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to "CPICH RSCP"
- CPICH RSCP	Check to see if it is present
Protocol error information	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in ~~Annex A~~ [\[9\] \(TS-34.108\) clause 9](#), which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)".

MEASUREMENT REPORT (Step 15)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results list	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	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 1
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	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
Event results	Check to see if this set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain IE "measured result" to report cell 2's CPICH RSCP value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall perform a cell update procedure and transmit a CELL UPDATE message. In this message, measured values CPICH RSCP for cell 1 and cell 3 shall be included in the IE "measured results on RACH".

After step 15, the UE shall apply the intra-frequency measurement reporting criteria" received in System Information Block type 12 messages of step 9. It shall send MEASUREMENT REPORT messages at ~~500~~ **500** milliseconds interval. In these messages, triggering of event '1a' shall be reported in IE "Event results" with IE "Primary CPICH info" containing the primary scrambling code for cell 3.

[The message shall contain IE "measured result" to report CPICH RSCP values of cell 1, 2 and 3.](#)

CR-Form-v4	
CHANGE REQUEST	
⌘	34.123-1 CR 219
⌘	ev -
⌘	Current version: 4.2.0

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to RRC Active set update test cases (Clause 8.3)
Source:	⌘ Ericsson, Qualcomm, MCI, ETSI, ASUSTeK, Rhode & Schwarz, Anite(co-ordinator)
Work item code:	⌘ TEI
Date:	⌘ 2002-05-20
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-4
	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)

Mon 13/05/2002 RRC-WSP1-TC 8.3.4.x Active set update T1S-020197r1 Ericsson, Qualcomm	
Reason for change:	The following issues are addressed for these test cases: <ol style="list-style-type: none">1) In some cases, measurement reports are forgotten.2) The default broadcasted measurement configuration information is not sufficient for these test cases.3) Indicated content of the measurement reports was in all cases incorrect.4) The cell identity is never reported in release 99, irrespective of the setting of the cell identity reporting indicator in the broadcast information.5) A single ACTIVE SET UPDATE message can not replace all the radio links included in the current active set
Summary of change:	The following changes are made: <ol style="list-style-type: none">1) Several measurement reports are added.2) In SIB11, the cell2 is included as a monitored cell in order to enable the necessary measurement reports.3) Contents of the measurement reports is updated.4) The cell identity is removed from the reporting.

- 5) In the Combined radio link addition and removal the initial active set is constituted of two radio links
- 6) Several minor (editorial) corrections have been made.

Reason for change:	Fri 03/05/2002 T1S-020135r1 (Package 1 - Section 8.3) MCI
Summary of change:	<p>Editorial.</p> <p>Corrections of spelling errors.</p> <p>In clause 8.3.1.1, UE needs a new C-RNTI value, otherwise the UE will keep performing cell update procedure. Therefore in step 4b, IE "New C-RNTI" is added and step 5 is added to ensure UE replies with UTRAN MOBILITY INFORMATION CONFIRM message. Similar corrections are made in clause 8.3.1.3, 8.3.4.2 and 8.3.4.3.</p> <p>In IE "Radio link addition information", missing IEs are added. Clause 8.3.4.1, 8.3.4.2, and 8.3.4.3 are affected.</p> <p>In step 6 of clause 8.3.4.2, IE "Event results" has been included as event '1b' is triggered and cell 2 has been included in the report because this requirement is specified in SIB 11.</p>

Reason for change:	Fri 03/05/2002 Add generic (Package 1 - Section 8.3) MCI
Summary of change:	<p>To check the UE is in the correct state.</p> <p>In clause 8.3.1.1, step 19 is added to call for procedure C.2. This is to check that the UE is in CELL_FACH state.</p> <p>In clause 8.3.4.1, step 14 is added to call for procedure C.3. This is to check that the UE is in CELL_DCH state.</p>

Reason for change:	Tues 07/05/2002 T1S-020143r1 (34.123-1 RRC_Miscellaneous corrections to section 8.3) ASUSTeK
Summary of change:	<p>In section 8.3.3.1:</p> <ol style="list-style-type: none"> 1. The UE-Id would not be included in MAC header when transmitting a message like CELL UPDATE on the uplink CCCH. Therefore in section 8.3.3.1.4, the SS could not verify that UE has used the assigned new C-RNTI via checking the MAC header in CELL UPDATE message. <p>In section 8.3.4.1:</p> <ol style="list-style-type: none"> 1. It is stated in section 8.3.4.1.2 Conformance requirement "After the UE receives confirmation from the physical layer in the UE, an ACTIVE SET UPDATE COMPLETE message is sent to the UTRAN". However, according to 25.331 v3.a.0 section 8.3.4.3, the UE shall transmit an ACTIVE SET UPDATE COMPLETE message without waiting for the Physical Layer synchronization. <p>In section 8.3.3.1:</p> <ol style="list-style-type: none"> 1. By checking the UTRAN MOBILITY INFORMATION CONFIRM (Step 3) to verify that UE has used the assigned new C-RNTI in MAC header. <p>In section 8.3.4.1:</p> <ol style="list-style-type: none"> 1. Change the text "After the UE receives confirmation from the

	physical layer in the UE, an ACTIVE SET UPDATE COMPLETE message is sent to the UTRAN.” in section 8.3.4.1.2 to “An ACTIVE SET UPDATE COMPLETE message is sent to the UTRAN without waiting for the Physical Layer synchronization.”
Reason for change:	Mon 13/05/2002 Review Results R&S Incomplete reference to core specifications
Summary of change:	Add in clause 8.3.3.1.2 “and clauses 8.6.3.9, 8.6.3.10”
Reason for change:	Tues 22/05/2002 Coordinator changes Anite/Siemens 1. Contents of Annex A moved to TS 34.108 2. Incorrect reference to UE CAPABILITY ENQUIRY INFORMATION message 3. In the text of the Test Procedure in clause 8.3.4.3.4 there is no reference to the UE sending an ACTIVE SET UPDATE COMPLETE
Summary of change:	1. Change references to Annex A to references to clause 9 in TS 34.108 2. In Test Procedure of clauses 8.3.4.1.4, 8.3.4.2.4, 8.3.4.3.4 change message name to UE CAPABILITY INFORMATION 3. In the text of the Test Procedure in clause 8.3.4.3.4 add reference to the UE sending an ACTIVE SET UPDATE COMPLETE
Consequences if not approved:	The prose test cases are incomplete and cannot test the UE correctly.
Clauses affected:	8.3.1.1, 8.3.1.3, 8.3.3.1, 8.3.4.1; 8.3.4.2; 8.3.4.3
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	This CR depends on T1S-020207 and T1S-020242. This CR impacts both Release-99 and Release-4.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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 RRC connection mobility procedure

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

This procedure is used to update UTRAN with the current cell of the UE after it has performed a cell reselection in CELL_FACH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1.3 Test purpose

To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. 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	dBm/3.84MHz	-60	-75	-75	-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 ~~does not send any response to this message~~ **sends 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". The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to acknowledge the change in physical resources. 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". The UE shall send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. 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.**

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". SS set k=0.
4a		→	CELL UPDATE	Value "cell reselection" shall be indicated in IE "Cell update cause"
4b		←	CELL UPDATE CONFIRM	See message content. SS set k=0.
5		→	UTRAN MOBILITY INFORMATION CONFIRM	SS checks the uplink PRACH channel to verify that no response is sent by UE.

6			SS reverses the transmission power level of cell 1 and cell 2.
7	→	CELL UPDATE	
8	←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH". If $k \geq 0$, new C-RNTI and U-RNTI identities are assigned to the UE. If $k > 0$, IE "Physical channel information elements" is included in this message. If $k > 1$, IE "Transport channel information elements" is included in this message. If $k > 2$, IE "RB information to be affected list" is included in this message. If $k > 3$, IE "RB information to release list" is included in this message. Increment k by 1.
9	→	UTRAN MOBILITY INFORMATION CONFIRM	If $k=1$ when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
10	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	If $k=2$ when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
11	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	If $k=3$ when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
12	→	RADIO BEARER RECONFIGURATION COMPLETE	If $k=4$ when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
13	→	RADIO BEARER RELEASE COMPLETE	If $k=5$ when SS received this message, proceed to next step. Else test fails. If this message is not received, test fails.
14			SS reverses the transmission power level of cell 1 and cell 2.
15	→	CELL UPDATE	
16			SS reverses the transmission power level of cell 1 and cell 2.
17	→	CELL UPDATE	
18	←	CELL UPDATE CONFIRM	
19	→	UTRAN MOBILITY INFORMATION CONFIRM	
20	↔	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, 7, 15 and 17)

The same message found in [Annex A 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 - S-RNTI	Check to see if set to '0000 0000 0001' In step 3, check to see if set to '0000 0000 0000 0000 0001'. In step 7 and when k<1, check to see if set to '0000 0000 0000 0000 0001'. In step 7 and when k>0, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 8. In step 15 and 17, check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 8.
Cell Update Cause	Check to see if set to 'Cell Re-selection'

CELL UPDATE CONFIRM (Step 4 ~~and 18~~)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_FACH

CELL UPDATE CONFIRM (Step 4b and 18)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_FACH
New C-RNTI	1010 1010 1010 1010

CELL UPDATE CONFIRM (Step 8 and k = 0)

Use the same message sub-type found in [step 4 Annex A Clause 9 of TS 34.108](#), 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	An arbitrary 16-bits string which is different from original C-RNTI assigned in RRC connection establishment procedure.

CELL UPDATE CONFIRM (Step 8 and k=1)

Use the same message sub-type found in step 8 and k=0, with the following exceptions:

Information Element	Value/remark
Maximum allowed uplink TX power	3 dB below the follow value: Minimum of {33 dBm, maximum uplink power allowed under the UE power class}

CELL UPDATE CONFIRM (Step 8 and k=2)

Use the same message sub-type found in step 8 and k=1, with the following exceptions:

Information Element	Value/remark
Added or Reconfigured uplink TrCH information	Same as the system information block type 5
Added or Reconfigured downlink TrCH information	Same as the system information block type 5

CELL UPDATE CONFIRM (Step 8 and k=3)

Use the same message sub-type found in step 8 and k=2, with the following exceptions:

Information Element	Value/remark
RB information to be reconfigure	
- RB identity	20
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Not Present
- RB mapping info	Not Present
- RB stop/continue	Stop

CELL UPDATE CONFIRM (Step 8 and k=4)

Use the same message sub-type found in step 8 and k=3, with the following exceptions:

Information Element	Value/remark
RB information to release	
-RB identity	4

8.3.1.1.5 Test requirement

After step 2 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".

After step ~~4~~ 3 the UE shall ~~not transmit any uplink message in response to the CELL UPDATE CONFIRMATION message received in step 4~~ transmit a CELL UPDATE message which sets the value "cell reselection" in IE "Cell update cause".

~~After step 4a, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message to acknowledge that it has started to use the new RNTI identities allocated.~~

After step 6 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.

After step 8, if k=1, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message to acknowledge that it has started to use the new RNTI identities allocated.

If k=2, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new physical channel assigned.

If k=3, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the transport channels.

If k=4, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the radio bearers.

If k=5, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message to acknowledge that it has release its radio bearers.

After step 14 the UE shall transmit a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

After step 16 the UE shall transmit a CELL UPDATE message to the cell with stronger transmitting power, in order to indicate that a cell reselection has taken place.

~~After step 18, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message to acknowledge that it has started to use the new RNTI identities allocated.~~

8.3.1.3 Cell Update: periodical cell update in CELL_FACH

8.3.1.3.1 Definition

8.3.1.3.2 Conformance requirement

This procedure is to update UTRAN with the current cell information, after the UE has remained in the service area in the CELL_FACH state for a period exceeding the timer value T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.3.3 Test purpose

To confirm that the UE executes a periodical cell update procedure following the expiry of timer T305.

8.3.1.3.4 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 8.3.1.3

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec	dBm/ 3.84 MHz	-60	-75	-75	-60

Table 8.3.1.3 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE is in CELL_FACH state. When the UE detects the expiry of timer T305 according to the settings in system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH with a cause indicating periodical cell updating. SS replies with a CELL UPDATE CONFIRM message, and IE "RRC State Indicator" is set to "CELL_FACH". SS verifies that the UE does not transmit any uplink message. SS then waits for T305 to expire again. The UE shall send another CELL UPDATE message to report periodic cell updating. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "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 to acknowledge the receipt of the new UE identities. Next, 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 8.3.1.3, 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. **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 then monitors the uplink CCCH for a period up to the maximum possible value for timer T305 (720 minutes) and verifies that no CELL_UPDATE message is received. After this, the 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 "T0" in table 8.3.1.3, 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. **Then the UE shall transmit an UTRAN MOBILITY INFORMATION**

CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message after T305 (5 minutes) expires.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS waits until T305 has expired.
2		→	CELL UPDATE	IE "Cell update cause" shall be set to "periodical cell updating"
3		←	CELL UPDATE CONFIRM	No RNTI identities are given. No information on PRACH and S-CCPCH are provided.
4				SS verifies that no uplink message is received from UE. SS waits for another period to allow T305 to expire.
5		→	CELL UPDATE	Set to "periodical cell update" in IE "Cell update cause" upon the expiry of timer T305.
6		←	CELL UPDATE CONFIRM	Including IEs "new C-RNTI", "new U-RNTI" and IE "RRC State Indicator" is set to "CELL_FACH"
7		→	UTRAN MOBILITY INFORMATION CONFIRM	

8	←	UTRAN MOBILITY INFORMATION	IE "T305" is set to 'infintiy'.
9	→	UTRAN MOBILITY INFORMATION CONFIRM	
10			SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.3
11	→	CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
12	←	CELL UPDATE CONFIRM	
12a	→	UTRAN MOBILITY INFORMATION CONFIRM	
13			SS waits for 720 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
14	←	UTRAN MOBILITY INFORMATION	IE "T305" is set to '5'.
15	→	UTRAN MOBILITY INFORMATION CONFIRM	
16			SS applies the downlink transmission power settings, according to the values in columns "T0" of table 8.3.1.3
17	→	CELL UPDATE	IE "Cell update cause" shall be set to "cell reselection".
18	←	CELL UPDATE CONFIRM	
18a	→	UTRAN MOBILITY INFORMATION CONFIRM	
19	→	CELL UPDATE	UE shall transmit this message with "cell update cause" set to "periodical cell updating" after T305 expires.
20	←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2 and 5)

The same message found in [Annex A 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'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE (Step 11 and 17)

The same message found in [Annex A 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 - S-RNTI Cell Update Cause	Check to see if set to '0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6. Check to see if set to "cell reselection"

CELL UPDATE CONFIRM (Step 3, 12, 18 and 20)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#).

CELL UPDATE CONFIRM (Step 6, 12 and 18)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI	Set to '0000 0000 0001' Set to an arbitrary string different from '0000 0000 0000 0000 0001'
New C-RNTI	1010 1010 1010 1010

CELL UPDATE (Step 19)

The same message found in [Annex A 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 - S-RNTI Cell Update Cause	Check to see if set to '0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6. Check to see if set to 'periodical cell updating'

UTRAN MOBILITY INFORMATION (Step 8)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode - T305	infinity

UTRAN MOBILITY INFORMATION (Step 14)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
New U-RNTI	Not Present
New C-RNTI	Not Present
UE Timers and constants in connected mode - T305	5

8.3.1.3.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 and then transmits a CELL UPDATE message setting value "periodical cell update" into IE "Cell update cause".

After step 3 the UE shall not send any uplink message as a response to CELL UPDATE CONFIRM message sent in step 3.

After step 4 the UE shall send a CELL UPDATE message, specifying the cell updating cause to be "periodical cell update".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

After step 8, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

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.

Between step 12 and 14, the UE shall not transmit any CELL UPDATE message.

After step 14, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 16, 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 18, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "periodical cell update" on the uplink CCCH.

8.3.3. UTRAN Mobility Information

8.3.3.1 UTRAN Mobility Information: Success

8.3.3.1.1 Definition

8.3.3.1.2 Conformance requirement

This procedure is used by the network to assign a new RNTI identity to the UE. It is initiated by the UTRAN when it sends a UTRAN MOBILITY INFORMATION message, which includes a new C-RNTI and/or U-RNTI on the downlink DCCH. The UE starts to use the new identities and transmits an UTRAN MOBILITY INFORMATION CONFIRM message to the UTRAN on the uplink DCCH.

Reference

3GPP TS 25.331 clause 8.3.3 [and clauses 8.6.3.9, 8.6.3.10](#)

8.3.3.1.3 Test purpose

To confirm that the UE starts to use the new identities after it receives a UTRAN MOBILITY INFORMATION message from the SS.

8.3.3.1.4 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 and it has been assigned a C-RNTI and U-RNTI. The SS transmits an UTRAN MOBILITY INFORMATION message which includes new C-RNTI and U-RNTI to the UE. Then the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message **using the assigned new C-RNTI in MAC header** as confirmation. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS checks that UE uses the new U-RNTI in the CELL UPDATE message **and the new C-RNTI in the MAC header**. Then SS sends CELL UPDATE CONFIRM. SS waits for UE to perform periodic cell updating. When SS received a CELL UPDATE message, SS sends CELL UPDATE CONFIRM to end the test procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_FACH state. UE has been allocated both C-RNTI and U-RNTI during RRC connection establishment phase.
2		←	UTRAN MOBILITY INFORMATION	Contains new C-RNTI and U-RNTI identities and a value for T305 that is different from the value defined in the system information.
3		→	UTRAN MOBILITY INFORMATION CONFIRM	The assigned new C-RNTI shall be included in MAC header.
4				SS wait for T305 (same as the value defined in system information) to expire.
5		→	CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
6		←	CELL UPDATE CONFIRM	
7				SS wait for T305 (the new value as specified in step 2) to expire.
8		→	CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
9		←	CELL UPDATE CONFIRM	

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Use the same message sub-type as in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI	'0000 0000 0001' '0101 0101 0101 0101 0101'
New C-RNTI	'1010 1010 1010 1010'
UE Timers and constants in connected mode - T305	5 minutes

UTRAN MOBILITY INFORMATION CONFIRM (Step 3)

Only the message type IE is checked in this message.

CELL UPDATE (Step 5 and 8)

The same message found in [Annex A 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 - S-RNTI	Check to see if set to '0000 0000 0001' Check to see if set to '0101 0101 0101 0101 0101'
Cell Update Cause	Check to see if set to 'periodical cell updating'

CELL UPDATE CONFIRM (Step 6 and 9)

Use the same message sub-type as in [Annex A Clause 9 of TS 34.108](#).

8.3.3.1.5 Test requirement

After step 2 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH **that using the assigned new C-RNTI in MAC header.**

After step 4 and 7 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "periodical cell updating". The IE "U-RNTI" shall be identical to the IE "New RNTI" found in UTRAN MOBILITY INFORMATION message sent by the SS in step 2.

8.3.4 Active set update in soft handover

8.3.4.1 Active set update in soft handover: Radio Link addition

8.3.4.1.1 Definition

8.3.4.1.2 Conformance requirement

Radio link addition is triggered in the network's RRC layer. The RRC entity in the network first configures the new radio link. Transmission and reception then begin immediately. This procedure is to update the active set of the connection between the UE and UTRAN. The UTRAN then transmits an ACTIVE SET UPDATE message to the UE. The UE configures layer 1 to begin reception for the additional radio link. **After the UE receives confirmation from the physical layer in the UE, an** ACTIVE SET UPDATE COMPLETE message is sent to the UTRAN **without waiting for the Physical Layer synchronization.**

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.1.3 Test purpose

To confirm that the UE continues to communicate with the SS on both the additional radio link and an already existing radio link after the radio link addition.

8.3.4.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 and 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 8.3.4.1

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/3.84 MHz	-60	-60	OFF	-60	-75	-60	-60	OFF

Table 8.3.4.1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

Initially, the UE [goes to connected mode and](#) establishes a radio access bearer in CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1. 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 ~~begins to configure~~ 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 [without waiting for the physical channel synchronisation](#).

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.1. UE shall not detect the DPCH from cell 1 but continue to communicate through the another DPCH from cell 2. [The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 1.](#)

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 ENQUIRY INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1. UE shall detect DPCH from cell 1 and 2 [and transmit a MEASUREMENT REPORT message which indicates the event '1a' for cell 1.](#)

~~And then~~ SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1. UE shall not detect the DPCH from cell 2 but continue to communicate through another DPCH from cell 1. [The UE shall transmit a MEASUREMENT REPORT message which indicates the event '1b' for cell 2.](#)

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond this message through the DPCH in cell 1. The UE shall transmit a UE CAPABILITY ~~ENQUIRY~~ INFORMATION message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message. [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 8.3.4.1.
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 8.3.4.1
5a		→	MEASUREMENT REPORT	See specific message contents for this message

6	←	UE CAPABILITY ENQUIRY	Use default message.
7	→	UE CAPABILITY INFORMATION	Use default message.
8	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
9			SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.1
9a	→	MEASUREMENT REPORT	See specific message contents for this message
10			Wait 15 seconds and SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.1
10a	→	MEASUREMENT REPORT	See specific message contents for this message
11	←	UE CAPABILITY ENQUIRY	Use default message.
12	→	UE CAPABILITY INFORMATION	Use default message.
13	←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
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 Content

[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, with the following exceptions:](#)

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- 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 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE

[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
Message Type Integrity check info - Message authentication code - RRC Message sequence number Measurement identity Measured Results - Intra-frequency measured results - Cell measured results - Cell Identity - SFN-SFN observed time difference - Cell synchronisation information - Primary CPICH info - Primary scrambling code - CPICH Ec/NO - CPICH RSCP - Pathloss <u>- Cell measured results</u> <u>- Cell Identity</u> <u>- SFN-SFN observed time difference</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 <u>- Intra-frequency measurement event results</u> <u>- Intra-frequency event identity</u> <u>- Cell measurement event results</u> - Primary CPICH info - Primary scrambling code	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent. 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. 1 0000-0000-0000-0000-0000-0000-0010 Checked that this IE is absent Checked that this IE is absent Checked that this IE is present absent 150 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 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 Checked that this IE is absent 1a Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE [\(Step 3\)](#)

The message to be used in this test is defined in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Radio link addition information Primary CPICH Info Primary Scrambling Code Downlink DPCH info for each RL DPCH frame offset	150 Calculated value from COUNT-C-SFN frame difference

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 Not Present 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 \(Step 5a\)](#)

<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> <u>Measurement identity</u> <u>Measured Results</u> - <u>Intra-frequency measured results</u> - <u>Cell measured results</u> - <u>Cell Identity</u> - <u>SFN-SFN observed time difference</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>SFN-SFN observed time difference</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>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>	<p>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.</p> <p>This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.</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>Checked that this IE is absent</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 absent</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>Checked that this IE is absent</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>Checked that this IE is absent</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>Checked that this IE is absent</p> <p>1b</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</p>

MEASUREMENT REPORT (Step 9a)

The received message at this step should have the same contents as the message received in Step 6, with the following exceptions:

<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>	<p>1a</p> <p>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</p>
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MEASUREMENT REPORT (Step 10a)

The received message at this step should have the same contents as the message received in Step 6, with the following exceptions:

<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>	<u>1b</u> <u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u>
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8.3.4.1.5 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 5a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a UE CAPABILITY INFORMATION message.

After step 9a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 10a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 11 the UE shall transmit a UE CAPABILITY INFORMATION message.

8.3.4.2 Active set update in soft handover: Radio Link removal

8.3.4.2.1 Definition

8.3.4.2.2 Conformance requirement

This procedure is to update the active set of the connections between the UE and the UTRAN after the UTRAN has commanded a removal of a radio link from the current active set. The UTRAN RRC transmits an ACTIVE SET UPDATE message to the UE RRC. The UE RRC requests UE L1 to terminate transmission and reception of the radio link to be removed. The UE shall continue to communicate normally with the UTRAN using the new active set, without losing the connection link. After this the UE acknowledges the radio link removal by sending an ACTIVE SET UPDATE COMPLETE message to the UTRAN on DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.2.3 Test purpose

To confirm that the UE continues to communicate with the SS on the remaining radio link after radio link removal on the active set. To confirm that the UE is not using the removed radio link to communicate with the SS.

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 ~~begins to 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 ~~ENQUIRY~~-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 ~~and~~ [UE shall re-select to cell 1 and](#) transmit a CELL UPDATE message ~~to re-establish an RRC CONNECTION.~~ [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.](#)

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, with the following exceptions:](#)

- <u>New intra-frequency cells</u>	
- <u>Intra-frequency cell id</u>	<u>1</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0dB</u>
- <u>Reference time difference to cell</u>	<u>Not Present</u>
- <u>Read SFN indicator</u>	<u>TRUE</u>
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>Primary CPICH info</u>	
- <u>Primary scrambling code</u>	<u>Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity indicator</u>	<u>FALSE</u>
- <u>Intra-frequency cell id</u>	<u>2</u>
- <u>Cell info</u>	
- <u>Cell individual offset</u>	<u>0dB</u>
- <u>Reference time difference to cell</u>	<u>Not Present</u>
- <u>Read SFN indicator</u>	<u>TRUE</u>
- <u>CHOICE mode</u>	<u>FDD</u>
- <u>Primary CPICH info</u>	
- <u>Primary scrambling code</u>	<u>Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108</u>
- <u>Primary CPICH TX power</u>	<u>Not Present</u>
- <u>TX Diversity indicator</u>	<u>FALSE</u>

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
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	0000-0000-0000-0000-0000-0000-0010 Checked that this IE is absent
- SFN-SFN observed time difference	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent present
- Primary CPICH info	
- Primary scrambling code	150 Refer to clause titled "Default settings for cell No.1 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
<u>- Cell measured results</u>	
<u>- Cell Identity</u>	Checked that this IE is absent
<u>- SFN-SFN observed time difference</u>	Checked that this IE is absent
<u>- Cell synchronisation information</u>	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
<u>- Primary CPICH info</u>	
<u>- Primary scrambling code</u>	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
<u>- CPICH Ec/N0</u>	Checked that this IE is absent
<u>- CPICH RSCP</u>	Checked that this IE is present
<u>- Pathloss</u>	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
<u>- Intra-frequency measurement event results</u>	
<u>- Intra-frequency event identity</u>	1a
<u>- Cell measurement event results</u>	
<u>- Primary CPICH info</u>	
<u>- Primary scrambling code</u>	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in Annex.A, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
— Primary CPICH Info	
— Primary Scrambling Code	150
— Downlink DPCH info for each RL	
— DPCH frame offset	Calculated value from COUNT-C-SFN frame difference

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	Not Present
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TEFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - RRC Message sequence number Measurement identity Measured Results - Intra-frequency measured results list - Cell measured results - Cell Identity - SFN-SFN observed time difference - Cell synchronisation information - CHOICE mode - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss - Cell measured results - Cell Identity - SFN-SFN observed time difference - Cell synchronisation information - CHOICE mode - Primary CPICH info - Primary scrambling code - CPICH Ec/N0 - CPICH RSCP - Pathloss Measured results on RACH Additional measured results Event results - CHOICE event result - Intra-frequency event identity - Cell measurement event results - CHOICE mode - Primary CPICH info - Primary scrambling code	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent. 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. 1 0000-0000-0000-0000-0000-0000-0001 Checked that this IE is absent Checked that this IE is absent Checked that this IE is present 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 Checked that this IE is absent 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 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 [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Radio link removal information - Primary CPICH info - Primary scrambling code	1 radio link to be removed 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 [Annex A Clause 9 of TS 34.108](#) 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 ~~Annex A~~ Clause 9 of TS 34.108, 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.

8.3.4.3 Active set update in soft handover: Combined radio link addition and removal

8.3.4.3.1 Definition

8.3.4.3.2 Conformance requirement

When radio links are to be replaced, the UTRAN RRC first configures the UTRAN L1 to activate the radio link(s) that are being added. The UTRAN RRC then transmits an ACTIVE SET UPDATE message to the UE RRC, which shall configure the UE L1 to terminate transmission and reception on the removed radio link(s) and begin transmission and reception on the added radio link(s). At the completion of the reconfiguration of radio links, the UE shall acknowledge the replacement with an ACTIVE SET UPDATE COMPLETE message.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.3.3 Test purpose

To confirm that the UE continues to communicate with the SS on the added radio link and removes radio link which exists prior to the execution of active set update procedure.

8.3.4.3.4 Method of test

Initial Condition

System Simulator: ~~2-3~~ cells- ~~Both~~ Cell 1, ~~and~~ Cell 2 ~~and Cell 3~~ are active, with downlink transmission power settings according to columns "T0" in table 8.3.4.3.

UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE [Active set is not full.]

Test Procedure

Table 8.3.4.3

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1		
CPICH Ec	dBm/3.84MHz	-60	-60	-60	-75	-60	OFF

Parameter	Unit	Cell 1					Cell 2					Cell 3				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
UTRA RF Channel Number		Ch. 1					Ch. 1					Ch. 1				
CPICH Ec	dBm/3.84 MHz	-60	-60	-60	OFF	-60	-80	-60	-60	OFF	-70	-80	-80	-60	-60	OFF

Table 8.3.4.3 illustrates the downlink power to be applied for the 2-3 cells at various time instants of the test execution.

The UE goes to connected mode and establishes a radio access bearer in the CELL_DCH state in cell 1.

SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3. UE transmits a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS configures the new radio link to be added from cell 2 and then the SS transmits to the UE in cell 1 an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information", indicating the addition of cell 2 into the active set, on DCCH using AM RLC.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3. UE shall be triggered to transmit a MEASUREMENT REPORT message which includes the primary scrambling code for cell 2-3 according to IE "Intra-frequency event identity", which is set to '1a' in the SYSTEM INFORMATION BLOCK TYPE 11. After the MEASUREMENT REPORT message is received, the SS begins to configure the new radio link to be added from cell 2-3 and then the SS transmits to the UE in cell 1 an ACTIVE SET UPDATE message which includes IE "Radio Link Addition Information" and IE "Radio Link Removal Information", indicating the removal of cell 1-2 and addition of cell 2-3 into the active set, on DCCH using AM RLC.

When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links and then the UE removes the radio link specified in an ACTIVE SET UPDATE message. The UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC.

SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3 removes the radio link in cell 1.

SS shall transmit a UE CAPABILITY ENQUIRY message to confirm that the UE can respond to this message through the DPCH in cell 2-3. The UE shall transmit a UE CAPABILITY ENQUIRY-~~INFORMATION~~ message. Then SS transmits a UE CAPABILITY INFORMATION CONFIRM message.

SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3 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, and transmit a CELL UPDATE message to re-establish an RRC CONNECTION.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
0a				SS configures the initial active set with only cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.3
0b		→	MEASUREMENT REPORT	See specific message contents for this message
0c		←	ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2.
0d		→	ACTIVE SET UPDATE COMPLETE	The UE adds the radio link in cell 2.
1				SS configures its downlink transmission power settings according to columns "T2" in table 8.3.4.3
2		→	MEASUREMENT REPORT	See specific message contents for this message
3		←	ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2,3 and IE "Radio Link Removal Information" for cell 1,2.
4		→	ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link in cell 2,3 and removes the old radio link in cell 1,2.
4a				SS configures its downlink transmission power settings according to columns "T3" in table 8.3.4.3
5		←	UE CAPABILITY ENQUIRY	Use default message.
6		→	UE CAPABILITY INFORMATION	Use default message.
7		←	UE CAPABILITY INFORMATION CONFIRM	Use default message.
8				SS configures its downlink transmission power settings according to columns "T4" in table 8.3.4.3
9		→	CELL UPDATE	
10		←	CELL UPDATE CONFIRM	See message content
11		→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

The contents of SIB11 broadcasted in cell 1 and cell 2 shall be in accordance with the default SIB11 as specified in section 6.1 of TS 34.108, with the following exception:

- New intra-frequency cells	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0dB
- 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 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0dB
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0dB
- 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 of TS 34.108
- Primary CPICH TX power	Not Present
- TX Diversity indicator	FALSE

The contents of SIB12 in cell 1 and cell 2, and SIB11 and SIB12 in cell 3 shall be in accordance with the default SIBs as specified in TS 34.108.

MEASUREMENT REPORT (Step 0b)

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub-IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- SFN-SFN observed time difference	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- SFN-SFN observed time difference	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 0c)

The message to be used in this test is defined in Annex A Clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	Calculated value from Cell synchronisation information
- DPCH frame offset	

MEASUREMENT REPORT (Step 2)

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub-IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.

- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	0000-0000-0000-0000-0000-0000-0010 Checked that this IE is absent
- SFN-SFN observed time difference	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is absent present
- Primary CPICH info	
- Primary scrambling code	150 Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
- Cell measured results	
- Cell Identity	Checked that this IE is absent
- SFN-SFN observed time difference	Checked that this IE is absent
- Cell synchronisation information	Checked that this IE is present and includes IE COUNT-C-SFN frame difference
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.2 (FDD)" in clause 6.1 of TS 34.108
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
- Intra-frequency measurement event results	
- Intra-frequency event identity	1a
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Refer to clause titled "Default settings for cell No.3 (FDD)" in clause 6.1 of TS 34.108

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	Set to same code as assigned for cell 2
- Primary Scrambling Code	
- Downlink DPCH info for each RL	Calculated value from COUNT-C-SFN frame difference
- DPCH frame offset	
Radio link removal information	
- Primary CPICH Info	Set to same code as assigned for cell 1
- Primary Scrambling Code	

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	Set to same code as assigned for cell 3
- Primary Scrambling Code	
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	Not Present
- Spreading factor	Refer to TS 34.108 clause 6.10.2.4 "Typical radio parameter sets"
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2

CELL UPDATE (Step 9)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in [Annex A Clause 9 of TS 34.108](#) with the following exceptions:

Information Element	Value/remark
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in [Annex A Clause 9 of TS 34.108](#), with the following exceptions:

Information Element	Value/remark
New C-RNTI	1010 1010 1010 1010

8.3.4.3.5 Test requirement

At step 0a the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 0c the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 1 the UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH using AM RLC.

After step 3 the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 5 the UE shall [transmit](#) a UE CAPABILITY INFORMATION message.

After step 8 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 10, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC

CHANGE REQUEST

⌘ **34.123-1 CR 220** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to clause 8.1 for package 1 of TS34.123-1

Source: ⌘ Anritsu, Ericsson, DoCoMo, Rhode & Schwarz, Nokia

Work item code: ⌘ TEI

Date: ⌘ 2002-05-13

Category: ⌘ **F**

Use one of the following categories:

- F** (correction)
- A** (corresponds to a correction in an earlier release)
- B** (addition of feature),
- C** (functional modification of feature)
- D** (editorial modification)

Detailed explanations of the above categories can be found in 3GPP [TR 21.900](#).

Release: ⌘ REL-4

Use one of the following releases:

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

Reason for change: ⌘ The followong issues have been addressed:

Section 8.1.1.1

1. In response to CN originated paging, NAS in UE will trigger the establishment of a UE-CN signalling connection, by transmitting an INITIAL DIRECT TRANSFER message. The contents of IE Intra Domain NAS Node Selector should be checked, as there are no other test cases for this purpose.
2. Some minor error corrections and clarifications are needed.

Section 8.1.1.2, 8.1.1.3

1. Some minor error corrections and clarifications are needed.
2. **Clarification the test purpose.**

Section 8.1.1.4

1. In the test case, it should verified that UE prior to the BCCH modification acts using the original System Information parameters, and after the BCCH modification uses the modified System Information parameters.
2. Some minor error corrections and clarifications are needed.

Section 8.1.1.5

1. The test procedure does not consider that the PAGING TYPE 1 message in Step 2 contains the U-RNTI of the UE. UE shall, in addition to acting on IE BCCH Modification Time, respond to this message with a CELL UPDATE message.

2. As UE is in RRC Connected Mode, UE shall read and obey to changes in SYSTEM INFORMATION BLOCK TYPE 6, not SYSTEM INFORMATION BLOCK TYPE 5.

3. Some minor error corrections and clarifications are needed.

Section 8.1.1.6

1. PAGING TYPE 1 message in Step 2 contains the U-RNTI of the UE. UE shall, in addition to acting on IE BCCH Modification Time, respond to this message with a CELL UPDATE message.

2. As UE is in RRC Connected Mode, UE shall read and obey to changes in SYSTEM INFORMATION BLOCK TYPE 6, not SYSTEM INFORMATION BLOCK TYPE 5.

3. Some minor error corrections and clarifications are needed.

Section 8.1.1.7

1. PAGING TYPE 2 message is used in case there exists no UE-CN signalling connection for the concerned CN domain. Therefore, UE will respond to the paging with an INITIAL DIRECT TRANSFER message, not an UPLINK DIRECT TRANSFER message. The contents of IE Intra Domain NAS Node Selector should be checked, as there are no other test cases for this purpose.

2. The test case should check procedure specific error handling instead of non-procedure specific error handling. This also tests robustness of the UE against future use of e.g. IE values that are not used in current version of the specification.

Section 8.1.1.8

1. PAGING TYPE 2 message is used in case there exists no UE-CN signalling connection for the concerned CN domain. Therefore, UE will respond to the paging with an INITIAL DIRECT TRANSFER message, not an UPLINK DIRECT TRANSFER message. The contents of IE Intra Domain NAS Node Selector should be checked, as there are no other test cases for this purpose.

Section 8.1.2.x

- To align with the latest revision of the core specifications
- To introduce information that is typically needed in real network configurations

Section 8.1.3.1

- Corrected test method

Section 8.1.5.1 and 8.1.5.4)

- 1) The test case should check procedure specific error handling in stead of non-procedure specific error handling.
- 2) System Specific capability reporting by the UE is currently not verified.

Several minor errors are corrected.

8.1.7.1 and 8.1.7.2 RRC/Security mode control (From T1S-020307 – Nokia

- 1) To align with the latest revision of the core specifications

General Changes:

- Modified all references to Annex A messages to point to [9] (TS 34.108) Clause 9 following the decision to move all default message contents there.

Section 8.1.9

- To align with the latest revision of the core specifications
- To add NAS message for PS domain to be tested.

Summary of change: ⌘ Section 8.1.1.1

1. Test procedure modified to include INITIAL DIRECT TRANSFER message
2. Conformance requirement copied from core specification 25.331. References added and corrected.
3. Specific message contents were corrected based on 25.331 and 34.108
4. More clarifications, and Routing Basis changed to IMSI in INITIAL DIRECT TRANSFER message.

Section 8.1.1.2

1. Conformance requirement copied from 25.331
2. Comment modified in Expected sequence for Step 3 and 4
3. UE needs a new C-RNTI value, otherwise the UE will keep performing cell update procedure. Therefore in step 6, IE "New C-RNTI" is added and step 7 is added to ensure UE replies with UTRAN MOBILITY INFORMATION CONFIRM message. Similar corrections are made in clause 8.1.1.3, 8.1.1.5, 8.1.1.6.
4. Conformance requirement: Explanation of the UE behaviour to transmit "UTRAN MOBILITY INFORMATION CONFIRM" was added.

Section 8.1.1.3

1. Conformance requirement copied from 25.331
2. Conformance requirement: Explanation of the UE behaviour to transmit "UTRAN MOBILITY INFORMATION CONFIRM" was added.
3. Method of test: Step5 "UTRAN MOBILITY INFORMATION CONFIRM" was added to Expected sequence.

Section 8.1.1.4

1. Test procedure steps 1, 1a and 1b are added to verify that UE uses the allowed signatures on RACH prior to the modification of SYSTEM INFORMATION BLOCK TYPE 5.
Added in Test Requirement that it shall be verified that UE uses an allowed signature on RACH.
2. Heading modified to indicate that the paging is to notify on BCCH modification.
3. In Expected Sequence, step 2 and 3, editorial modifications of the comments have been made to make the timing of the steps more clear.
4. In step 2, the BCCH modification time is set to 2048 frames from the current SFN, instead of 4088, to avoid possible problems due to 4088 being close to the

maximum SFN (4095).

5. In step 3, the statement “SS starts to monitor the uplink RACH after...” has been deleted, since SS shall all the time monitor the RACH.
6. In PAGING TYPE 1 message (Step 2), it is clarified that the BCCH modification time is set to the current SFN + 2048, to align with the test procedure.
7. 8.1.1.4.4 Method of test: Specific message contents were corrected based on 25.331.

Section 8.1.1.5

1. Test procedure is modified to handle that UE responds to the PAGING TYPE 1 message in Step 2 message with a CELL UPDATE message, in addition to acting on IE BCCH Modification Time
2. SYSTEM INFORMATION BLOCK TYPE 5 message changed to SYSTEM INFORMATION BLOCK TYPE 6.
3. Heading modified to indicate that the paging is to notify on BCCH modification.
4. Added in 8.1.1.5.5 Test Requirement that it shall be verified that UE uses an allowed signature on RACH.
5. Similar clarifications on SFN and BCCH Modification time as in 8.1.1.4
6. Method of test: Test procedure was corrected from SIB type 5 to SIB type 6. Expected sequence was corrected same as above. And step 7 “UTRAN MOBILITY INFORMATION CONFIRM” was added.
7. Corrected Editorial mistake.

Section 8.1.1.6

1. In PAGING TYPE 1 (Step 2), the Paging record list is changed to be “Not present”, in order to avoid a UE response.
2. As UE is in RRC Connected Mode, UE will read and follow changes in SYSTEM INFORMATION BLOCK TYPE 6.
3. Heading modified to indicate that the paging is to notify on BCCH modification.
4. Added in 8.1.1.6.5 Test Requirement that it shall be verified that UE uses an allowed signature on RACH.
5. Similar clarifications on SFN and BCCH Modification time as in 8.1.1.4
6. Method of test: Specific message contents were corrected based on 25.331
7. Corrected Editorial mistake.

Section 8.1.1.7

1. UPLINK DIRECT TRANSFER message changed to INITIAL UPLINK DIRECT TRANSFER message.
2. The PAGING TYPE 2 (Step 2) message have been modified to result in a protocol error cause “Information element value not comprehended”
3. Editorial corrections and more clarifications due to discussions on the email reflector.

Section 8.1.1.8

1. UPLINK DIRECT TRANSFER message changed to INITIAL UPLINK

DIRECT TRANSFER message.

2. **More clarifications due to discussions on the email reflector.**

8.1.2.1 RRC Connection Establishment in CELL_DCH state: Success

- In a corresponding CR to 34.108 (T1S-020158) the IE “Capability update requirement” included in the default RRC CONNECTION SETUP message applicable for this test has been set to request both the UE radio access capabilities and the GSM capabilities added to. It will be beneficial for networks to request this information during connection establishment so that e.g. measurement on GSM neighbouring cell may be activated immediately. The tests should cover this case which is considered quite normal
- The presence of the IE “Measured results on RACH” in the RRC CONNECTION REQUEST message is checked. In a corresponding CR to TS 34.108 the RACH measurement of the CPICH Ec/No of the current cell is added to the default System Information Block type 5. The reason for adding this information is that UTRAN will typically need this information to determine the initial power setting.
- **8.1.2.1.4 Method of test: Specific message contents of “RRC CONNECTION REQUEST (Step 1)” were corrected based on 25.331.**
- Added specific message content for SIB 11 in order to produce IE “measured results on RACH” as required by the conformance statement.

8.1.2.2 RRC Connection Establishment: Success after T300 timeout

- A statement is added to clarify that for this test the configuration with 2 SCCPCH's as specified in 6.1.1 of TS 34.108 shall be used. Currently there is no test that explicitly applies that configuration. Since this test is a suitable candidate, the proposal is to implicitly test that SCCPCH configuration by means of this test (which will also cover testing of the Stand-alone signalling RB for PCCH specified in 14.4.1 of TS 34.108)
- The check of K against N300 has been modified. N300 reflects the number of allowed re-transmissions for the RRC CONNECTION REQUEST message. One retransmission is always triggered by the critically extended RRC CONNECTION SETUP message in step 6. This means that if N300 would be set to 1, SS should proceed to step 6 upon first occurrence of step 4. This is achieved by checking K against N300-1. A note has been added to clarify that this test only works for N300 values larger than 0, while timer expiry is verified only for N300 values exceeding 1.
- Excluding mandatory IEs from a message, as currently suggested in step 6, will result in an ASN.1 transfer syntax error which will result in general procedure independent error handling. Only the verification of procedure specific error handling is considered a useful part of this test. Therefore, the proposal is to extend the message by means of an unexpected critical message extension. This will result in procedure specific error handling and verifies the robustness of the UE against protocol extensions in this or future protocol releases. The corresponding behaviour is also updated
- The PAGING TYPE 1 message incorrectly included a paging record for the concerned UE including corresponding with UTRAN initiated paging (on U-RNTI) while the UE is in idle mode. The paging record has been removed since it is not needed for this test
- SIB 5 message:
 - The value of the puncturing limit value has been corrected; it should be 1.00 instead of 100 (FDD)

8.1.2.7 RRC Connection in CELL_FACH state: Success

- The IE “Capability update requirement” included in the default RRC CONNECTION SETUP message applicable for this test has been set to request both the UE radio

access capabilities and the GSM capabilities. This is needed since the capability information is checked in as specified in the specific message contents for RRC CONNECTION SETUP COMPLETE. It will be beneficial for networks to request this information during connection establishment so that the information is always available e.g. when at a later stage measurement on GSM neighbouring cell need to be activated. The tests should cover this case which is considered quite normal

- The comment in step 2 has been removed since that is already covered by the default message contents for CELL_FACH.

8.1.2.9 RRC Connection Establishment: Success after Physical channel failure and Invalid configuration

- The test has been modified to correct the inconsistency between the test procedure and the actual steps further on in the test. The modifications are such that now both physical channel failure and invalid configuration are tested by two separate RRC connection establishment loops, as was stated in the test procedure. For the first loop the SS now verifies that the UE does not send more RRC connection request messages than allowed while the 2nd loop verifies that the UE succeeds to establish the connection on the last possible attempt.
- Clarifications have been added concerning the referencing of default message contents

8.1.3.1 RRC Connection Release in CELL_DCH state: Success

- Comment in step 3 is rephrased to avoid suggestion that T308 expires on SS side of the interface
- **8.1.3.1.4 Method of test: The sentence "P is equal to the value of IE "N308" in an RRC CONNECTION RELEASE message" was removed because there is no relation between N308 with P on 25.331 clause 8.1.4.**

Section 8.1.5.1 and 8.1.5.4

- 1) In stead of a procedure non-specific error, procedure specific error handling will be triggered by including an unexpected critical message extension. This also tests robustness of the UE against future protocol extensions in this or future protocol releases. The corresponding behaviour is also updated.
- 2) System Specific capability reporting is verified in one test case.
- 3) Transaction id has been added to the UE CAPABILITY CONFIRM message.

Several other minor error corrections

8.1.7.1a RRC/Security mode control in CELL_DCH state (CS Domain)

- The differences between CS and PS domain variants of the CELL_DCH test case became significant enough to justify splitting the test case into two.
- The original test assumed that Ciphering and Integrity would not be started when this test was run. That is incorrect, according to 34.108 the standard messages that get the UE to the relevant states will start both Integrity and Ciphering.
- Addition of more references to the Reference section.
- The CELL_DCH CS Domain test must include "Activation time for DPCH", as there are TM mode CS Speech RB present (again according to 34.108 configuration).
- The addition of the Authentication procedure within this test case, which will result in

the generation of a new security keyset (CK/IK).

- The test case should check error handling. This also tests robustness of the UE against future use of e.g. IE values that are not used in current version of the specification.
- SS transmits a SECURITY MODE COMMAND message with IEs "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.
- The SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE. Following that, the SS immediately transmits another valid SECURITY MODE COMMAND message to UE. 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.
- Some minor error corrections and clarifications are needed.

8.1.7.1b Security mode command in CELL_DCH state (PS Domain)

- The differences between CS and PS domain variants of the CELL_DCH test case became significant enough to justify splitting the test case into two.
- The original test assumed that Ciphering and Integrity would not be started when this test was run. That is incorrect, according to 34.108 the standard messages that get the UE to the relevant states will start both Integrity and Ciphering.
- Addition of more references to the Reference section.
- The addition of the Authentication and Ciphering procedure within this test case, which will result in the generation of a new security keyset (CK/IK).
- The test case should check error handling. This also tests robustness of the UE against future use of e.g. IE values that are not used in current version of the specification.
- SS transmits a SECURITY MODE COMMAND message with IEs "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.
- The SS transmits a valid SECURITY MODE COMMAND message which includes the correct downlink activation times and "Integrity check info" IE. Following that, the SS immediately transmits another valid SECURITY MODE COMMAND message to UE. 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.
- Some minor error corrections and clarifications are needed.

8.1.7.2 Security mode command in CELL_FACH state

- The original test assumed that Ciphering and Integrity would not be started when this test was run. That is incorrect, according to 34.108 the standard messages that get the UE to the relevant states will start both Integrity and Ciphering.
- Addition of more references to the Reference section.
- The addition of the Authentication and Ciphering procedure within this test case, which will result in the generation of a new security keyset (CK/IK).
- The test case should check error handling. This also tests robustness of the UE against future use of e.g. IE values that are not used in current version of the specification.
- 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.

- Some minor error corrections and clarifications are needed.

Changes in r4/r5

8.1.1.1.4 and 8.1.2.2.4

The IEs shall be same as TS34-108 clause 6.1 except for specific IEs for SIB definition.

Section 8.1.9

The name of SIGNALLING CONNECTION RELEASE REQUEST is changed to SIGNALLING CONNECTION RELEASE INDICATION..

ATTACH procedure is added in STEP6.

8.1.7.1 a and 8.1.7.1b:

- Modified test procedure to remove sequention transmission of SECURITY MODE COMMAND to cause incompatible configuration error following feedback from RAN2.

Consequences if not approved: ⌘ Test cases remain invalid.

Clauses affected: ⌘ 8.1.1.1, 8.1.1.2, 8.1.1.3, 8.1.1.4, 8.1.1.5, 8.1.1.6, 8.1.1.7, 8.1.1.8, 8.1.2.1, 8.1.2.2, 8.1.2.7, 8.1.2.9, 8.1.3.1, 8.1.5.1, 8.1.5.4, 8.1.7.1a, 8.1.7.1b, 8.1.7.2, 8.1.9

Other specs affected: ⌘ Other core specifications ⌘ Test specifications O&M Specifications

Other comments: ⌘ Affects both Rel 99 and Rel 4.

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 Paging

8.1.1.1 Paging for Connection in idle mode

8.1.1.1.1 Definition

8.1.1.1.2 Conformance requirement

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

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

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

1> if the IE "Used paging identity" is a CN identity:

2> compare the IE "UE identity" with all of its allocated CN UE identities:

2> if one match is found:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers.

1> otherwise:

2> ignore that paging record.

:

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to the cause for establishment indicated by upper layers;

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

1> if the RRC connection establishment procedure was not successful:

2> indicate failure to establish the signalling connection to upper layers and end the procedure.

1> when the RRC connection establishment procedure is completed successfully:

2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL_PCH or URA_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

The UE shall, in the INITIAL DIRECT TRANSFER message:

1> set the IE "NAS message" as received from upper layers; and

1> set the IE "CN domain identity" as indicated by the upper layers; and

1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;
2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;
3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and

1> include the calculated START value for that CN domain in the IE "START".

In CELL FACH state, the UE shall:

1> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if "System Information Block Type 12" is not being broadcast);

1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.

The UE shall:

1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;

1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:

2> confirm the establishment of a signalling connection to upper layers; and

2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED SIGNALLING CONNECTIONS.

1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:

2> the procedure ends.

~~In idle mode, UE monitors the paging occasions determined using parameters from SYSTEM INFORMATION BLOCK messages. When the UE receives a PAGING TYPE 1 message transmitted on PCCH during one of its assigned paging occasions, it shall attempt to establish an RRC connection.~~

Reference

3GPP TS 25.331 clause 8.1.2 and 8.1.8, 3GPP TS 25.211 clause 5.3.3.7-10 (FDD), 3GPP TS 25.221 (TDD), 3GPP TS 25.304 clause 8.

8.1.1.1.3 Test purpose

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which includes IE "UE identity" (in IE "Paging Record") set to the IMSI of the UE, and responds with a correct INITIAL DIRECT TRANSFER message.

8.1.1.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 with a CN UE identity (set to IMSI), depending on the CN domain(s) supported by the UE.

Test Procedure

SS transmits SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages, depending on the CN type supported by the UE. The SS transmits a PAGING TYPE 1 message, which includes an unmatched CN UE identity for the UE in the idle state. The UE shall not change its state. The SS transmits a PAGING TYPE 1 message, which includes a matched CN UE identity for the UE in the idle state. During transmission of PAGING TYPE 1 messages, SS selects the correct paging indicator on the PICH in order to allow the UE to respond to paging. Then the UE transmits an RRC CONNECTION REQUEST to the SS, the SS transmits an RRC CONNECTION SETUP to the UE. When the UE receives this message, the UE establishes an RRC connection and transmits an RRC CONNECTION SETUP COMPLETE message [and an INITIAL DIRECT TRANSFER message](#) on the uplink DCCH.

NOTE: For UEs supporting GSM-MAP CN type only, SYSTEM INFORMATION TYPE 1 messages are to be sent by SS in this test case. On the other hand, SS transmits SYSTEM INFORMATION TYPE 13 messages if the UE under test supports only ANSI-41 CN type.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SYSTEM INFORMATION BLOCK TYPE 13 or SYSTEM INFORMATION BLOCK TYPE 1	Transmit these messages on the BCCH, in addition to the normal BCCH transmissions. See specific message contents.
2		←	PAGING TYPE 1	The SS transmits the message, which includes an unmatched identity (incorrect IMSI), and the UE does not change its state.
3		←	PAGING TYPE 1	The SS transmits the message, which includes a matched identity (test-SIM IMSI).
4		→	RRC CONNECTION REQUEST	
5		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish an RRC connection.
6		→	RRC CONNECTION SETUP COMPLETE	
7		→	INITIAL DIRECT TRANSFER	

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 (Step 1) – for UEs supporting GSM-MAP core networks

Information Element	Value/remark
CN common GSM-MAP NAS system information	LAC Location Area Information (LAI)
CN domain system information list	Only 1 entry
- CN domain system information	Supported Domain (PS Domain or CS Domain)
- CN domain identity	GSM-MAP Supported CN type
- CHOICE CN Type	1E 01(CS) or 00 00(PS) 00 00(CS) or 1E 01(PS)
- CN domain specific NAS system information	7
- CN domain specific DRX cycle length coefficient	
UE Timers and constants in idle mode	
- T300	4000 milliseconds
- N300	37
- T312	10 seconds
- N312	200

SYSTEM INFORMATION TYPE 13 (Step 1) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
CN domain system information list	Only 1 entry
CN domain system information	Supported Domain (PS Domain or CS Domain)
- CN domain identity	ANSI-41 Supported CN type
- CHOICE CN Type	Default
- CN domain specific NAS system information	7 6
- CN domain specific DRX cycle length coefficient	
UE Timers and constants in idle mode	
- T300	5000-4000 milliseconds
- N300	7 3
- T312	10 sec
- N312	200

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	
CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	Supported Registered Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the TEST USIM card.
BCCH modification info	Not Present

PAGING TYPE 1 (Step 3)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	
CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	Supported Registered Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI stored in the TEST USIM card
BCCH modification info	Not Present

RRC CONNECTION REQUEST (Step 4)

Information Element	Value/remark
Message type	
Initial UE identity	Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Check to see if it is set to the same value as "Paging Cause" IE in the PAGING TYPE 1 message transmitted on step 3.
Protocol Error Indicator	Check to see if it is set to FALSE
Measured results on RACH	Not checked.

INITIAL DIRECT TRANSFER (Step 7) – for UEs supporting GSM-MAP core networks

Information Element	Value/remark
Message Type	Not present
Integrity check info	CS domain or PS domain
CN domain identity	
Intra Domain NAS Node Selector	R99
- CHOICE version	GSM-MAP
-- CHOICE CN type	IMSI (response to IMSI paging)
--- CHOICE Routing basis	Bit string (10) consisting of DecimalToBinary ((IMSI div 10) mod 1000). The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.
---- Routing parameter	
--- Entered parameter	False
NAS message	Not checked
START	Not checked
Measured results on RACH	Not checked

INITIAL DIRECT TRANSFER (Step 7) – for UEs supporting ANSI-41 core networks

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

8.1.1.1.5 Test requirement

After step 2 the UE shall not transmit on the uplink CCCH in order to establish a RRC connection.

After step 5 the UE shall have an RRC connection based on dedicated physical channel resources and transmit an RRC CONNECTION SETUP COMPLETE message and INITIAL DIRECT TRANSFER message on the uplink DCCH.

8.1.1.2 Paging for Connection in connected mode (CELL_PCH)

8.1.1.2.1 Definition

8.1.1.2.2 Conformance requirement

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in [25.304] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

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

:

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- 1> if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE;
- 2> if the optional IE "CN originated page to connected mode UE" is included;
- 3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

~~In CELL_PCH state, a UE can respond to a paging request from UTRAN. In this case, the UTRAN has requested to establish a connection with the UE. The UE shall then attempt to perform a cell update procedure and move to CELL_FACH state in order to respond to the paging using uplink CCCH.~~

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI";

the UE shall:

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

Reference

3GPP TS 25.331 clause 8.1.2, 8.3.1.7.

8.1.1.2.3 Test purpose

To confirm that the UE enters the CELL_FACH state after it receives a PAGING TYPE 1 message which indicates that the paging has originated from UTRAN. To verify that the UE performs cell update procedure after entering the CELL_FACH state.

8.1.1.2.4 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 a valid U-RNTI already assigned by the SS.

Test Procedure

SS transmits SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages, depending on the CN type supported by the UE. The SS transmits a PAGING TYPE 1 message, which includes an unmatched U-RNTI. The UE does not change its state. Then SS transmits a PAGING TYPE 1 message with a matched identifier but originates from the CN instead of UTRAN. The UE shall not change state after receiving this message. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI. Then the UE enters the CELL_FACH state and performs the cell updating procedure.

NOTE: For UEs supporting GSM-MAP CN type only, SYSTEM INFORMATION TYPE 1 messages are to be sent by SS in this test case. On the other hand, SS transmits SYSTEM INFORMATION TYPE 13 messages if the UE under test supports only ANSI-41 CN type.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SYSTEM INFORMATION BLOCK TYPE 13 or SYSTEM INFORMATION BLOCK TYPE 1	Transmit these messages on the BCCH, in addition to the normal BCCH transmissions. See specific message contents
2		←	PAGING TYPE 1	The SS transmits a message including an unmatched identifier. UE shall not respond to the paging.
3		←	PAGING TYPE 1	The SS transmits a message includes a matched identifier but with the originator being the <u>used paging identity being a CN identity</u> , UE shall not respond to the paging.
4		←	PAGING TYPE 1	The SS transmits the message with the UTRAN being the <u>originator used paging identity being a UTRAN identity</u> and including the UE's assigned U-RNTI
5		→	CELL UPDATE	The UE enters the CELL_FACH state. UE performs cell updating procedure. The CELL UPDATE message shall contain the value "Cell Update Cause" set to "paging response".
6		←	CELL UPDATE CONFIRM	See message content.
7		→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an arbitrary 16-bit string which is different from the SRNC identity assigned.
- S-RNTI	Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

PAGING TYPE 1 (Step 3)

Same as the PAGING TYPE 1 message as in step 3 of clause 8.1.1.1.4.

PAGING TYPE 1 (Step 4)

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

SYSTEM INFORMATION BLOCK TYPE 13

Use the same SYSTEM INFORMATION BLOCK TYPE 13 message as specified in clause 8.1.1.1.4.

SYSTEM INFORMATION BLOCK TYPE 1

Use the same SYSTEM INFORMATION BLOCK TYPE 1 message as specified in clause 8.1.1.1.4.

[CELL UPDATE CONFIRM \(Step 6\)](#)

[Use the message sub-type in default message content defined in \[9\] \(TS 34.108\) Clause 9, with the following exceptions.](#)

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

[UTRAN MOBILITY INFORMATION CONFIRM \(Step 7\)](#)

[Only the message type is checked.](#)

8.1.1.2.5 Test requirement

After step 2 the UE shall not respond to the PAGING TYPE 1 message sent in step 2.

After step 3 the UE shall not respond to the PAGING TYPE 1 message sent in step 3.

After step 4 the UE shall enter the CELL FACH state and send a CELL UPDATE message with "Cell Update Cause" IE set to "paging response".

After step 6 the UE shall be in the CELL_FACH state [and shall transmit UTRAN MOBILITY INFORMATION CONFIRM message.](#)

8.1.1.3 Paging for Connection in connected mode (URA_PCH)

8.1.1.3.1 Definition

8.1.1.3.2 Conformance requirement

[A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. For an UE in idle mode, the paging occasions are specified in \[25.304\] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL_PCH state or URA_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.](#)

[When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.](#)

:

[If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:](#)

- 1> [if the IE "Used paging identity" is a UTRAN identity and if this U-RNTI is the same as the U-RNTI allocated to the UE:](#)

2> if the optional IE "CN originated page to connected mode UE" is included:

3> indicate reception of paging; and

3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.

2> otherwise:

3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

~~This procedure is used to transmit a PAGING TYPE 1 message from the network to selected UEs in URA_PCH state using the paging control channel (PCCH). The UE listens to it and then enters the CELL_FACH state.~~

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- does not include "Transport channel information elements"; and

- does not include "Physical channel information elements"; and

- includes "CN information elements"; or

- includes the IE "Ciphering mode info"; or

- includes the IE "Integrity protection mode info"; or

- includes the IE "New C-RNTI"; or

- includes the IE "New U-RNTI";

the UE shall:

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

Reference

3GPP TS 25.331 clause 8.1.2, 8.3.1.7.

8.1.1.3.3 Test purpose

To confirm that the UE enters the CELL_FACH state after it receives a PAGING TYPE 1 message in which the IE "Used paging identity" is set to "UTRAN identity", ~~in IE "Used paging identity"~~ and the UE takes the U-RNTI value assigned to ~~it~~UE in the IE "U-RNTI".

8.1.1.3.4 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 by the SS.

Test Procedure

The SS transmits a PAGING TYPE 1 message, which includes an unmatched U-RNTI. The UE does not change its current state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI. Then the UE listens to it and enters the CELL_FACH state to transmit a CELL UPDATE message using uplink CCCH in respond to the paging.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	The SS transmits the message that includes an unmatched identifier, but UE does not change its state.
2		←	PAGING TYPE 1	The SS transmits the message that includes a matched identifier.
3		→	CELL UPDATE	The UE enters the CELL_FACH state.
4		←	CELL UPDATE CONFIRM	See message content.
5		→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	
- SRNC Identity	Set to an unused SRNC identity which is different from the SRNC identity assigned.
- S-RNTI	Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	Only 1 entry
Paging record list	
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	Not Present
BCCH modification info	Not Present

[CELL UPDATE CONFIRM \(Step 4\)](#)

[Use the message sub-type in default message content defined in \[9\] \(TS 34.108\) Clause 9, with the following exceptions.](#)

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

[UTRAN MOBILITY INFORMATION CONFIRM \(Step 5\)](#)

[Only the message type is checked.](#)

8.1.1.3.5 Test requirement

After step 1 the UE shall not respond to the paging.

After step 2 the UE shall enter the CELL FACH state, and transmit CELL UPDATE message to initiate the cell updating procedure with the paging cause set to "paging response".

After step 4 the UE shall be in the CELL_FACH state [and shall transmit UTRAN MOBILITY INFORMATION CONFIRM message](#).

8.1.1.4 Paging for **N**otification [of BCCH modification](#) in idle mode

8.1.1.4.1 Definition

8.1.1.4.2 Conformance requirement

When a system information block on the BCCH is modified, the PAGING TYPE 1 message can be sent on the PCCH to inform UE in the idle mode about the changes, which are currently taking place. The PAGING TYPE 1 message includes the IE "BCCH Modification Information". Upon receiving this notification from the UTRAN, the UE shall read the relevant MIB and/or SIB(s) subsequently during idle mode.

Reference

3GPP TS 25.331 clause 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 IMSI 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 time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN which corresponds to the modification time is reached. 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 IMSI 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		←	Void 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. Also the BCCH modification time is set to 4088-2048 radio frames from the current SFN. SS continuously to broadcast the same original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH. for a period stretching 4087 frames.
3		←	MASTER INFORMATION BLOCK	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.
		←	SYSTEM INFORMATION BLOCK TYPE 5	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)".
				SS starts to monitor the uplink RACH after approximately 4087 frames from step 2.
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)

<u>Information Element</u>	<u>Value/remark</u>
<u>Message Type</u> <u>Paging record list</u> <u>Paging record</u> <ul style="list-style-type: none"> <u>- CHOICE Used paging identity</u> <u>- Paging Cause</u> <u>- CN Domain Identity</u> <u>- CHOICE UE Identity</u> <u>- IMSI</u> <u>BCCH modification info</u>	<u>Only 1 entry</u> <u>CN identity</u> <u>Terminating Call with one of the supported services</u> <u>Supported Domain (PS Domain or CS Domain)</u> <u>TMSI</u> <u>Same as registered TMSI or P-TMSI</u> <u>Not Present</u>

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 Paging record list BCCH modification info MIB Value Tag BCCH Modification time	Not Present 2 4088Set to (current SFN + 2048)

MASTER INFORMATION BLOCK (Step 3)

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

~~PAGING TYPE 1 (Step 4)~~

Information Element	Value/remark
Message Type Paging record list Paging record <ul style="list-style-type: none"> CHOICE Used paging identity Paging Cause CN Domain Identity CHOICE UE Identity IMSI BCCH modification info	Only 1 entry CN identity Terminating Call with one of the supported services Supported Domain (PS Domain or CS Domain) IMSI Set to the same octet string as in the IMSI value stored in the TEST-USIM card Not Present

RRC CONNECTION REJECT

Use the same message type found in ~~clause Annex A~~[9] (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 ~~N~~notification of BCCH modification in connected mode (CELL_PCH)

8.1.1.5.1 Definition

8.1.1.5.2 Conformance requirement

When a system information block on the BCCH is modified, the message PAGING TYPE 1 can be sent on the PCCH to inform UE in the CELL_PCH state about this change. This message includes the IE "BCCH Modification Information". Upon receiving this notification from the UTRAN, the UE shall read the relevant MIB and/or SIB(s) subsequently while in CELL_PCH state in addition to any actions caused by the IE "Paging record" occurrences in the message.

Reference

3GPP TS 25.331 clause 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 identity is equal to the U-RNTI assigned earlier. The UE shall respond with a CELL UPDATE message and set IE "cell update cause" to "paging response". The PAGING TYPE 1 message shall also include the IE "BCCH Modification Information" indicating the time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN, which corresponds to the modification time, is reached. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE ~~6~~5 message. In the new SIB TYPE ~~5~~6 message, the IE "Available Signature" is different when compared to the original SIB TYPE ~~6~~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. Also the modification time is set to 4088 <u>2048</u> radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH for a period stretching 4087 frames.
<u>2a</u>		→	<u>CELL UPDATE</u>	
<u>2b</u>		←	<u>CELL UPDATE CONFIRM</u>	
3		←	MASTER INFORMATION BLOCK	<u>At the SFN indicated by the BCCH modification time</u> , SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting.
		←	SYSTEM INFORMATION BLOCK TYPE 65	At the same time, SS starts to transmit the affected SIB TYPE 65 continuously. The value of IE "Available Signature" is changed from "0000 0000 1111 1111(B)" to "1111 1111 0000 0000(B)". SS starts to monitor the uplink RACH after approximately 4087 SFN from step 2.
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH at the correct paging occasion.
5		→	CELL UPDATE	
6		←	CELL UPDATE CONFIRM	<u>See message content.</u>

Specific Message Contents

PAGING TYPE 1 (Step 2)

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	2
- MIB Value Tag	<u>24088</u>
- BCCH Modification time	<u>Set to (current SFN + 2048)</u>

CELL UPDATE (Step 2a)

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

<u>Information Element</u>	<u>Value/remark</u>
U-RNTI - SRNC identity - S-RNTI Cell update cause	Checked to see if it is set to the same values as in step 2 Paging response

CELL UPDATE CONFIRM (Step 2b)

Use the same message type found in ~~clause Annex A~~[9] (TS 34.108) Clause 9., with the following exception:

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

MASTER INFORMATION BLOCK (Step 3) ~~and~~

<u>Information Element</u>	<u>Value/remark</u>
MIB Value tag	2

SYSTEM INFORMATION BLOCK TYPE ~~65~~ (Step 3)

~~The content of these messages is the same in the message used in step 3 specified in clause 8.1.1.4.4.~~

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

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

PAGING TYPE 1 (Step 4)

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

CELL UPDATE (Step 5)

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

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

CELL UPDATE CONFIRM (Step 6)

~~Use the same message type found in clause Annex A.~~ Use the same message type found in [Annex A](#)[9] (TS 34.108) Clause 9., with the following exception:

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

8.1.1.5.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "paging response", using an allowed signature according to original IE "Available signature" in SYSTEM INFORMATION BLOCK TYPE 6.

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 6.

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

8.1.1.6.1 Definition

8.1.1.6.2 Conformance requirement

When a system information block on the BCCH is modified, the UTRAN can send a PAGING TYPE 1 message on the PCCH to inform UE about the changes while the UE is in the URA_PCH state. This message includes the IE "BCCH Modification Information". When receiving this message in URA_PCH state, the UE shall read the relevant MIB and/or SIB(s).

Reference

3GPP TS 25.331 clause 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 time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN which corresponds to the modification time is reached. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE ~~5-6~~ message. In the new SIB TYPE 5 message, the IE "Available Signature" is different when compared to the original SIB TYPE ~~5-6~~ 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. Also the modification time is set to 4088 <u>2048</u> radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH for a period stretching 4087 frames.
3		←	MASTER INFORMATION BLOCK	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.
		←	SYSTEM INFORMATION BLOCK TYPE 5	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)".
				SS starts to monitor the uplink RACH after approximately 4087 SFN from step 2.
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	
Paging record list	Only 1 entry Not present
Paging record	
CHOICE Used paging identity	
U-RNTI	UTRAN identity
SRNC Identity	Equal to the U-RNTI assigned earlier.
S-RNTI	
CN originated page to connected mode UE	Not Present
BCCH modification info	2
- MIB Value Tag	<u>2048</u>
- BCCH Modification time	Set to (current SFN + 2048)

MASTER INFORMATION BLOCK (Step 3) ~~and~~

Information Element	Value/remark
MIB Value tag	2

SYSTEM INFORMATION BLOCK TYPE ~~65~~ (Step 3)

~~The content of these messages is the same in the message used in step 3 specified in clause 8.1.1.4.4. 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 - Available Signature	FDD '1111 1111 0000 0000'B

PAGING TYPE 1 (Step 4)

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

CELL UPDATE (Step 5)

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

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

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in ~~clause Annex A~~[9] (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 6.

8.1.1.7 Paging for Connection in connected mode (CELL_DCH)

8.1.1.7.1 Definition

8.1.1.7.2 Conformance requirement

This procedure is used to transmit a PAGING TYPE 2 message from the network to selected UE in CELL_DCH state using the dedicated control channel (DCCH). The UE listens to it and responds to this message accordingly.

When UE receives an invalid PAGING TYPE 2 message, UE shall perform procedure specific error handling.

Reference

3GPP TS 25.331 clause 8.1.11.

8.1.1.7.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message which includes **the IE "Paging Cause" and the IE "Paging Record Type Identifier"** ~~for the UE.~~

To confirm that the UE responds with a RRC STATUS message after it **has** received an invalid PAGING TYPE 2 message.

8.1.1.7.4 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, after executing a location registration or attach procedure followed by the release of the TMSI of P-TMSI allocated. **The UE has been registered in both CS and PS domains.**

Test Procedure

The SS transmits an invalid PAGING TYPE 2 message. UE shall respond by transmitting a RRC STATUS message on the ~~uplink~~ DCCH using RLC-AM mode. Finally, SS transmits a PAGING TYPE 2 message, which includes a matched Paging Record Type Identifier. Then the UE shall responds to this message by the transmission of an **INITIAL DIRECT TRANSFER** ~~upper layer~~ message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 2	See message content.
3		→	RRC STATUS	The UE shall respond by reporting the protocol error to the SS.
4		←	PAGING TYPE 2	SS pages the UE with a matched identifier and with a valid "paging cause" IE from a new CN Domain .
5		→	UPLINK INITIAL DIRECT TRANSFER	The UE shall respond to the paging message sent in step 4 .

Specific Message Contents

PAGING TYPE 2 (Step 2)

SS sends a message containing a protocol error causing the UE to perform procedure specific error handling.

Information Element	Value/remark
<p>All IEs</p> <p>Message Type RRC transaction identifier Integrity check info</p> <p>- Message authentication code</p> <p>- RRC Message sequence number</p> <p>Paging Cause CN Domain Identity Paging Record Type Identifier</p>	<p>Not Present</p> <p>Arbitrarily selects an integer between 0 and 3 The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. 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. Set to value "Spare" CS 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.</p>

RRC STATUS (Step 3)

Use the same message type found in [Annex A\[9\] \(TS 34.108\) Clause 9](#), with the following exception.

Information Element	Value/remark
<p>Identification of received message - Received message type - RRC transaction identifier</p> <p>Protocol Error Information - Protocol Error Cause</p>	<p>PAGING TYPE 2 Checked to see if the value is identical to the same IE in the PAGING TYPE 2 message. Checked to see if set to "ASN.1 violation or encoding error" Information element value not comprehended</p>

PAGING TYPE 2 (Step 4)

Use the same message type found in [Annex A\[9\] \(TS 34.108\) Clause 9](#), with the following exception.

Information Element	Values/Remarks
<p>Paging cause CN domain identity Paging record type identifier</p>	<p>Terminating Call supported by the UE Domain supported by the UE 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.</p>

UPLINK-INITIAL DIRECT TRANSFER (Step 5) – for UEs supporting GSM-MAP core networks

Only the message type IE for this message is checked.

<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> <u>CN domain identity</u> <u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>-- CHOICE CN type</u> <u>--- CHOICE Routing basis</u> <u>---- Routing parameter</u> <u>--- Entered parameter</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<p>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. 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.</p> <p>CS domain or PS domain</p> <p>R99 GSM IMSI (response to IMSI paging)</p> <p>Bit string (10) consisting of DecimalToBinary [(IMSI div 10) mod 1000]. The bits of the result are numbered from b0 to b9, with bit b0 being the least significant.</p> <p>FALSE Not checked Not checked Not checked</p>

INITIAL DIRECT TRANSFER (Step 5) – for UEs supporting ANSI-41 core networks

<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> <u>CN domain identity</u> <u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<p>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. 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.</p> <p>CS domain or PS domain</p> <p>ANSI-41 : Bitstring(14), all bits set to 0</p> <p>Not checked Not checked Not checked</p>

8.1.1.7.5 Test requirement

After step 2 the UE shall respond to the paging message by transmitting RRC STATUS on the DCCH, stating the protocol error as "Information element value not comprehended ASN.1 violation or encoding error".

After step 4 the UE shall respond to the paging message by transmitting an UPLINK-INITIAL DIRECT TRANSFER message on the uplink DCCH.

8.1.1.8 Paging for Connection in connected mode (CELL_FACH)

8.1.1.8.1 Definition

8.1.1.8.2 Conformance requirement

This procedure is used to transmit a PAGING TYPE 2 message from the network to selected UE in CELL_FACH state using the dedicated control channel (DCCH). The UE shall listen to it and responds to this message accordingly.

Reference

3GPP TS 25.331 clause 8.1.11.

8.1.1.8.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message, which includes a matching value for IE "Paging Record Type Identifier".

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

Test Procedure

The SS transmits a PAGING TYPE 2 message. Then the UE shall respond by transmitting an upper layer message to answer this page.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2		←	PAGING TYPE 2	The SS transmits the message includes a matched identifier.
3		→	UPLINK INITIAL DIRECT TRANSFER	The UE responds by sending an upper layer message.

Specific Message Content

PAGING TYPE 2 (Step 24)

~~Use the same message content as in step 1 from 8.1.1.7.4. Use the same message type found in Annex A[9] (TS 34.108) Clause 9, with the following exception.~~

<u>Information Element</u>	<u>Values/Remarks</u>
<u>Paging cause</u>	<u>Terminating Call supported by the UE</u>
<u>CN domain identity</u>	<u>CS</u>
<u>Paging record type identifier</u>	<u>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.</u>

~~UPLINK~~ INITIAL DIRECT TRANSFER (Step 32) – for UEs supporting GSM-MAP core networks

~~Only the message type IE for this message is checked.~~

<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> <u>CN domain identity</u> <u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>-- CHOICE CN type</u> <u>--- CHOICE Routing basis</u> <u>---- Routing parameter</u> <u>--- Entered parameter</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<p>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.</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><u>CS domain</u></p> <p>R99 GSM Local (P)TMSI</p> <p>The TMSI/P-TMSI consists of 4 octets (32bits). The bits are numbered from b0 to b31, with bit b0 being the least significant</p> <p>The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI where bit b14 is the least significant.</p> <p>FALSE Not checked Not checked Not checked</p>

INITIAL DIRECT TRANSFER (Step 3) – for UEs supporting ANSI-41 core networks

<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> <u>CN domain identity</u> <u>Intra Domain NAS Node Selector</u> <u>- CHOICE version</u> <u>NAS message</u> <u>START</u> <u>Measured results on RACH</u>	<p>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.</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><u>CS domain</u></p> <p>ANSI-41 : Bitstring(14), all bits set to 0</p> <p>Not checked Not checked Not checked</p>

8.1.1.8.5 Test requirement

After step 2+ the UE shall respond to the PAGING TYPE 2 message by transmitting an ~~UPLINK~~-INITIAL DIRECT TRANSFER message on the uplink DCCH.

< Next Modified Section >

8.1.2 RRC Connection Establishment

8.1.2.1 RRC Connection Establishment in CELL_DCH state: Success

8.1.2.1.1 Definition

8.1.2.1.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message. This message is to be transmitted on the uplink CCCH and shall include the IE "Initial UE identity" and the IE "Measured results on RACH" ~~and is to be transmitted on the uplink CCCH.~~
2. After the UE receives an RRC CONNECTION SETUP message which includes the same value of the IE "initial UE identity", radio resource parameters (i.e. Signalling radio bearers and multiplexing info) and U-RNTI, UE then configures the layer 2 and layer 1 so as to support the DCCH according to the radio resource parameters specified. The procedure successfully ends when the network receives an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH.

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.1.3 Test purpose

To confirm that the UE leaves the Idle Mode and correctly establishes signalling radio bearers on the DCCH. To confirm that the UE indicates the requested UE radio access capabilities and UE system specific capabilities (may be used by UTRAN e.g. to configure inter RAT- measurements).

8.1.2.1.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE. SS then transmits an RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that does not match the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST message sent by the UE. UE receives the RRC CONNECTION SETUP message before timer T300 expires but discards it due to a IE "Initial UE Identity" mismatch. UE shall wait for timer T300 to time out before re-transmitting a RRC CONNECTION REQUEST message to the SS. SS again assigns the necessary radio resources and U-RNTI. SS then transmits a RRC CONNECTION SETUP message containing an IE "Initial UE Identity" that matches the IE "Initial UE Identity" in the most recent RRC CONNECTION REQUEST sent by the UE. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	By outgoing call operation. See specific message contents.
2		←	RRC CONNECTION SETUP	This message is not addressed to the UE. See specific message contents.
3		→	RRC CONNECTION REQUEST	UE shall re-transmit the request message again after a time out of T300 from step 1.
4		←	RRC CONNECTION SETUP	See specific message contents.
5				The UE configures the layer 2 and layer 1.
6		→	RRC CONNECTION SETUP COMPLETE	See specific message contents.

Specific Message Content

[System Information Block type 11 \(FDD\)](#)

[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
- Intra-frequency reporting quantity for RACH Reporting	
- SFN-SFN observed time difference reporting indicator	No report
- CHOICE mode	
- FDD	
- Reporting quantity	CPICH Ec/N0
- Maximum number of reported cells on RACH	current cell

[RRC CONNECTION REQUEST \(Step 1\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:](#)

Information Element	Value/remark
Measured results on RACH	Check to see if set in accordance with the IE "Intra-frequency reporting quantity for RACH Reporting" included in SYSTEM INFORMATION BLOCK Type 11
- Measurement result for current cell	
- CHOICE mode	
- FDD	
- CHOICE measurement quantity	
- CPICH Ec/N0	The actual reported value is not checked

[RRC CONNECTION SETUP \(Step 2\)](#)

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

Information Element	Value/remark
Initial UE Identity	Set to the same type as in the RRC CONNECTION REQUEST message but with a different value

[RRC CONNECTION SETUP \(Step 4\)](#)

[Use the default message with the same message type and covering the scenario used in this test \(Transition to CELL_DCH\) specified in clause 9 of TS 34.108.](#)

[RRC CONNECTION SETUP COMPLETE \(Step 6\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108 with the following exception.](#)

<u>Information Element</u>	<u>Value/remark</u>
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE radio access capability extension	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE system specific Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

8.1.2.1.5 Test requirement

After step 2 the UE shall re-transmit the RRC CONNECTION REQUEST message again in order to continue the RRC connection establishment procedure.

After step 6 the UE shall establish an RRC connection and continue the procedure of the outgoing call on the DCCH.

8.1.2.2 RRC Connection Establishment: Success after T300 timeout

8.1.2.2.1 Definition

8.1.2.2.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode. The UE shall transmit an RRC CONNECTION REQUEST message which includes the IE "Initial UE identity". This message shall be sent on the uplink CCCH.

When there are more than one PRACHs available, the UE shall select one PRACH randomly and transmit an RRC CONNECTION REQUEST message by use of selected PRACH.

2. In the case of a failure to establish the RRC connection at the expiry of timer T300, the UE retries to establish the RRC connection until V300 is greater than N300

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

8.1.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell. [SCCPCH configuration as specified in 6.1.1 of TS 34.108.](#)

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

NOTE: This test requires that N300 is bigger than 0, which is the case (see default contents of SIB 1, specified in TS 34.108). Expiry of timer T300 is verified only for N300 values exceeding 1.

Test Procedure

Before the test starts, SYSTEM INFORMATION BLOCK TYPE 5 message is modified and this modification is notified to the UE. An internal counter K in SS is initialized to a value = 0. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits ~~an~~ RRC CONNECTION SETUP message containing an unexpected critical message extension as specified in step 6 to the UE. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" different from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 4088-2048 radio frames from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH for a period stretching 4087 frames. See specific message contents
1a		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 5	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 5 messages. See specific message contents
2				SS initializes counter K to 0. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
3		→	RRC CONNECTION REQUEST	See the clause 9 in TS 34.108 on default message content
4				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 5. SS increments K.
5				SS checks to see if K is equal to N300. If so, goes to step 6. Else, continues to execute step 3. SS increments K. The next step is step 3.
6		←	RRC CONNECTION SETUP	Use an invalid message in ASN.1. See specific message contents for this message
7		→	RRC CONNECTION REQUEST	See specific message contents
8		←	RRC CONNECTION SETUP	This is a legal message. See the clause 9 in TS 34.108 on default message content for RRC.
9				The UE configures the layer 1 and layer 2.
10		→	RRC CONNECTION SETUP COMPLETE	See clause 9 in TS 34.108 on default message content

Specific Message Contents

PAGING TYPE 1 (Step 1a)

Information Element	Value/remark
Message Type	
Paging record list	Not present Only 1 entry
Paging record	
CHOICE Used paging identity	
U-RNTI	UTRAN identity
SRNC Identity	Equal to the U-RNTI assigned earlier.
S-RNTI	
BCCH modification info	
- MIB Value Tag	2
- BCCH Modification time	Set to (current SFN + 2048) 4088

SYSTEM INFORMATION TYPE 5 (Step 1a) - (FDD)

[Use the default parameter values for the system information block with the same type specified in clause 6.1.1 of TS 34.108, with the following exceptions:](#)

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	0
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Power offset Pp-m	0dB
- CTFC information	1
- Reference TFC ID	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor β_c	11
- Gain factor β_d	15
- Reference TFC ID	0
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#0)
- Available signature End Index	7 (ASC#0)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#2)
- Available signature End Index	7 (ASC#2)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	Not Present

CHOICE mode	FDD
Available signature Start Index	0 (ASC#4)
Available signature End Index	7 (ASC#4)
Assigned Sub-channel Number	'1111'B
- ASC Setting	FDD
- CHOICE mode	0 (ASC#5)
- Available signature Start Index	7 (ASC#5)
- Available signature End Index	'1111'B
- Assigned Sub-channel Number	
- ASC Setting	Not Present
CHOICE mode	FDD
Available signature Start Index	0 (ASC#5)
Available signature End Index	7 (ASC#5)
Assigned Sub-channel Number	'1111'B
- ASC Setting	FDD
- CHOICE mode	0 (ASC#7)
- Available signature Start Index	7 (ASC#7)
- Available signature End Index	'1111'B
- Assigned Sub-channel Number	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	2
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	3
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	64
- Preamble scrambling code number	1
- Puncturing Limit	1.00
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- RLC size	360
- Number of TB and TTI List	
- Number of Transport blocks	1
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	

- Transmission time interval	20 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Complete
- TFCS addition information	
- CHOICE CTFC Size	2 bit
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Computed Gain Factor
- Power offset Pp-m	0 dB
- CTFC information	1
- Reference TFC ID	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor β_c	11
- Gain factor β_d	15
- Reference TFC ID	0
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#0)
- Available signature End Index	7 (ASC#0)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#2)
- Available signature End Index	7 (ASC#2)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#4)
- Available signature End Index	7 (ASC#4)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	Not Present
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#6)
- Available signature End Index	7 (ASC#6)
- Assigned Sub-channel Number	'1111'B
- ASC Setting	
- CHOICE mode	FDD
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-channel Number	'1111'B
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)

- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
CHOICE mode	FDD
- Primary CPICH DL TX power	31
- Constant value	-10
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	2
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	4
- STTD indicator	FALSE
- AICH transmission timing	0

SYSTEM INFORMATION TYPE 5 (Step 1a) – 3.84 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/1
- Channelisation Code	8/2
- Channelisation Code	8/3
- Channelisation Code	8/4
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1

- ASC Setting	TDD
- CHOICE mode	3.84 Mcps TDD
- CHOICE TDD option	'11110000'B (ASC#7)
- Available SYNC_UL codes indices	Size1
- CHOICE subchannel size	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Timeslot Number	14
- PRACH Channelisation Code	
- CHOICE SF	8
- Channelisation Code List	
- Channelisation Code	8/5 where i denotes an unassigned code
- Channelisation Code	8/6 where i denotes an unassigned code
- Channelisation Code	8/7 where i denotes an unassigned code
- Channelisation Code	8/8 where i denotes an unassigned code
- PRACH Midamble	Direct
-PNBSCH allocation	Not Present
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	1/2
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD

- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

SYSTEM INFORMATION TYPE 5 (Step 1a) – 1.28 Mcps TDD

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX _{UpPCHdes}	10
- Power Ramping Step	3
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/1
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	6
- Channelisation code	16/16
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present
- WT	4
- PNBSCH allocation	Not Present
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	
- RLC size	168
- Number of TB and TTI List	
- Transport Time Interval	Not Present
- Number of Transport Blocks	1
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	10 ms
- Type of channel coding	Convolutional
- Coding Rate	½
- Rate matching attribute	150
- CRC size	16
- RACH TFCS	Not Present
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	

- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'11110000'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD
- PRACH info (PRACH No.2)	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- SYNC_UL info	
- SYNC_UL codes bitmap	'11110000'B
- PRX _{Up} PC _{Hdes}	10
- Power Ramping Step	1
- Max SYNC_UL Transmissions	8
- Mmax	32
- PRACH Definition	
- Timeslot Number	
- CHOICE TDD option	1.28 Mcps TDD
- Timeslot number	1
- PRACH Channelisation Code	
- Channelisation Code List	
- Channelisation Code	8/2
- Midamble shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	8
- Midamble Shift	Not Present
- FPACH info	
- Timeslot number	An available down-link timeslot
- Channelisation code	16/15
- Midamble Shift and burst type	
- CHOICE TDD option	1.28 Mcps TDD
- Midamble Allocation Mode	Default
- Midamble Configuration	16
- Midamble Shift	Not Present

- WT	4
- PNBSCH allocation	Not Present
- RACH TFS	Common transport channels
- CHOICE Transport channel type	168
- Dynamic Transport format information	Not Present
- RLC size	1
- Number of TB and TTI List	ALL
- Transport Time Interval	10 ms
- Number of Transport Blocks	Convolutional
- CHOICE Logical Channel List	1/2
- Semi-static Transport Format information	150
- Transmission time interval	16
- Type of channel coding	Not Present
- Coding Rate	
- Rate matching attribute	
- CRC size	
- RACH TFCS	
- PRACH partitioning	
- Access Service Class	
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#0)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#1)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#2)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#3)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#4)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#5)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#6)
- CHOICE subchannel size	Size1
- ASC Setting	
- CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps TDD
- Available SYNC_UL codes indices	'00001111'B (ASC#7)
- CHOICE subchannel size	Size1
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)

- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- CHOICE mode	TDD

RRC CONNECTION SETUP (Step 6)

[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
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted.
- 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.
Critical extensions	'01'H

[RRC CONNECTION REQUEST \(Step 7\)](#)

[Use the default message with the same message type specified in clause 9 of TS 34.108, with the following exceptions:](#)

Information Element	Value/remark
Protocol Error Indicator	Check to see if set to TRUE

8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step 6 the UE shall re-send another RRC CONNECTION REQUEST message.

After step 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.

< Next Modified Section >

8.1.2.7 RRC Connection Establishment in CELL_FACH state: Success

8.1.2.7.1 Definition

8.1.2.7.2 Conformance requirement

During the RRC connection establishment, the UTRAN might assign common physical resource to the UE using an RRC CONNECTION SETUP message. When no information about the physical channels accessible is available from the message, the UE shall utilize the PRACH and S-CCPCH information transmitted on the BCCH and then enter CELL_FACH state. Subsequently, the UE shall establish the required signalling radio bearers with the UTRAN using common physical resources.

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.7.3 Test Purpose

To confirm that the UE is able to enter CELL_FACH state and setup signalling radio bearers using common physical channels. [To confirm that the UE indicates the requested UE radio access capabilities \(used by UTRAN to decide which RAB to establish\) and UE system specific capabilities \(may be used by UTRAN to configure inter RAT-measurements\).](#)

8.1.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After the SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE, and then transmits an RRC CONNECTION SETUP message to the UE within timer T300. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	Test operator is requested to make an outgoing call. The UE shall transmit this message, indicating the correct establishment cause. See specific message contents.
2		←	RRC CONNECTION SETUP	See specific message contents. SS omits both IE "Uplink DPCH Info" and IE "Downlink DPCH Info" from the message.
3				The UE shall configure the layer 2 and layer 1.
4		→	RRC CONNECTION SETUP COMPLETE	UE shall send this message on the DCCH, carried by the assigned PRACH resources. See specific message contents. FDD

Specific Message Content

RRC CONNECTION REQUEST

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

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

RRC CONNECTION SETUP

For this message, the contents of the message to be used are basically identical to the message sub-type entitled "RRC CONNECTION SETUP message (Transition to CELL_FACH)" found in [Annex A \[9\] \(TS 34.108\) Clause 9](#) with the following exception:

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

RRC CONNECTION SETUP COMPLETE

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

Information Element	Value/remark
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE radio access capability extension	Checked to see if compatible with the stated capability in PIXIT/PICS statements.
UE system specific Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

8.1.2.7.5 Test requirements

After step 3 the UE shall establish the RRC connection, and transmit RRC CONNECTION SETUP COMPLETE message on the DCCH using PRACH physical resource specified in system information block messages.

8.1.2.8 Void

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

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode. The UE shall transmit an RRC CONNECTION REQUEST message which includes the IE "Initial UE identity". This message shall be sent on the uplink CCCH.
2. In the case of a failure to establish the RRC connection due to a physical channel failure after the UE receives an RRC CONNECTION SETUP message, the UE retries to establish the RRC connection until V300 is greater than N300
3. In the case of a RRC CONNECTION SETUP message is received by UE causes invalid configuration, the UE retries to establish the RRC connection until V300 is greater than N300.

Reference

3GPP TS 25.331 clause 8.1.3.

8.1.2.9.3 Test purpose

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. 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, 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		
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 3a6 . Else, continues to execute step 24 .
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. See message content below. SS does not configure the physical channel.
5				The next step is step 3c2 .
6		←	RRC CONNECTION SETUP	Use the default message with the same message sub-type specified in clause 9 in TS 34.108. See the clause 9 in TS 34.108 on default message content for RRC. 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

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>
<u>Initial UE identity</u>	<u>Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI</u>
<u>Establishment Cause</u>	<u>Originating Interactive Call or Originating Background Call or Originating Streaming Call</u>

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>
<u>Initial UE identity</u>	<u>Same as the IMSI stored in the TEST USIM card, or the registered TMSI or P-TMSI</u>
<u>Establishment Cause</u>	<u>Originating Interactive Call or Originating Background Call or Originating Streaming Call</u>
<u>Protocol error indicator</u>	<u>TRUE</u>

RRC CONNECTION SETUP (Step ~~2b4~~ and K=4)

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

~~RRC CONNECTION SETUP (Step 4 and K>1)~~

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

~~RRC CONNECTION REQUEST (Step 2 and K=1)~~

~~Use the same message sub-type found in clause 9 of TS 34.108, 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	TRUE

8.1.2.9.5 Test requirement

After step ~~3a 4~~ the UE shall not re-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.

8.1.3 RRC Connection Release

8.1.3.1 RRC Connection Release in CELL_DCH state: Success

8.1.3.1.1 Definition

8.1.3.1.2 Conformance requirement

1. The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL_DCH and CELL_FACH. Furthermore this procedure can interrupt any ongoing procedures with the UE in the above listed states.

When the UE receives the first RRC CONNECTION RELEASE message, it shall:

- ...
 - in state CELL_DCH:
 - initialise the counter V308 to zero;
 - ...
 - submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using UM RLC on the DCCH to the UTRAN;
 - ...
 - start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.
2. When in state CELL_DCH and the timer T308 expires, the UE shall:
 - increment V308 by one;
 - if V308 is equal to or smaller than N308:
 - retransmit the RRC CONNECTION RELEASE COMPLETE message, without incrementing "Uplink RRC Message sequence number" for signalling radio bearer RB1 in the variable INTEGRITY_PROTECTION_INFO;
 - if V308 is greater than N308:
 - release all its radio resources;
 - ...
 - enter idle mode;
 - perform the actions specified in TS 25.331 clause 8.5.2 when entering idle mode;
 - and the procedure ends.

Reference

3GPP TS 25.331 clause 8.1.4.3, 8.1.4.6

8.1.3.1.3 Test purpose

To verify:

1. that the UE when receiving an RRC CONNECTION RELEASE message transmits N308+1 RRC CONNECTION RELEASE COMPLETE messages before release of radio resources and entering into idle mode

2. that the time between UE transmissions of the RRC CONNECTION RELEASE COMPLETE message is equal to the value of the T308 timer.

8.1.3.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-1 or state 6-3) 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 by prompting the operator to initiate an outgoing call. After the DCCH is established, SS transmits an RRC CONNECTION RELEASE message to the UE to disconnect the connection. SS then waits for the UE to transmit an RRC CONNECTION RELEASE COMPLETE message using unacknowledged mode. SS checks to see if $P \cdot N308 + 1$ such messages has been received at each expiry of T308 timer. **P is equal to the value of IE "N308" in an RRC CONNECTION RELEASE message.**

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state after a successful RRC connection establishment by virtue of the operator making an outgoing call.
2		←	RRC CONNECTION RELEASE	SS disconnect the connection established. The value in IE "N308" is arbitrarily chosen from 1 to 8 and denoted by P.
3		→	RRC CONNECTION RELEASE COMPLETE	SS waits for the arrival of N308 + 1 such message with an interarrival time of at the expiry of each T308 timer, using unacknowledged mode.
4				SS verifies that the UE release its L2 signalling radio bearer and dedicated resources and enters idle mode.

Specific Message Content

RRC CONNECTION RELEASE (Step 2)

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

Information Element	Value/remark
N308	Arbitrarily chosen between 1 and 8

8.1.3.1.5 Test requirement

After step 2 the UE shall transmit $P \cdot N308 + 1$ RRC CONNECTION RELEASE COMPLETE messages. The time between the transmissions shall be equal to the T308 timer value.

After step 3 the UE shall initiate the release of the L2 signalling radio bearer and dedicated resources and enter idle mode.

< Next Modified Section >

8.1.5.1 UE Capability in CELL_DCH state: Success

8.1.5.1.1 Definition

8.1.5.1.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network that is supported by the UE or if the UTRAN needs an update of the UE's UMTS capability information or of its inter-system classmark.
2. When the UE receives a UE CAPABILITY ENQUIRY message, the UE transmits a UE CAPABILITY INFORMATION message on the uplink DCCH. Then the UTRAN transmits a UE CAPABILITY INFORMATION CONFIRM message.
3. If during the execution of UE capability update procedure, an invalid UE CAPABILITY INFORMATION CONFIRM is received, the UE shall respond with RRC STATUS message and decide whether to re-transmit UE CAPABILITY INFORMATION message by comparing its internal counter against N304.

Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.

8.1.5.1.3 Test purpose

To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS. 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 ~~an invalid~~ UE CAPABILITY ENQUIRY message containing an unexpected critical message extension. ~~This message lacks all IEs except IE "Message Type"~~. 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 ~~"UE radio access capability" IE~~. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure ~~test~~.

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 ~~an invalid~~ UE CAPABILITY INFORMATION CONFIRM message containing an unexpected critical message extension. ~~This message lacks all IEs except IE "Message Type"~~. The UE shall detect ~~a protocol~~ an error and send an RRC STATUS message to report this event. After submitting this message to lower layers for transmission ~~receiving RLC acknowledgement for this message~~, the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH after the expiry of restarted T304. SS completes this test by transmitting 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 The IE "Protocol error cause" found in IE "Protocol error information" shall be set to "ASN.1 violation or encoding error"
4		←	UE CAPABILITY ENQUIRY	See specific message contents for this message Use default message.
5		→	UE CAPABILITY INFORMATION	See specific message contents for this message Use default 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 All IEs	Not Present
RRC transaction identifier Integrity check info - Message authentication code - RRC Message sequence number Critical extensions	Arbitrarily selects an integer between 0 and 3 The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted. 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. '01'H

RRC STATUS (Step 3)

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

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

UE CAPABILITY ENQUIRY (Steps 4)

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

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

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
<u>UE system specific capability</u>	<u>Presence and value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings</u>

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
<u>Critical extensions</u> All IEs	'01' <u>Not Present</u>

RRC STATUS (Step 10)

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

Information Element	Value/remark
<u>Identification of received message</u> - <u>Received message type</u> - <u>RRC transaction identifier</u>	<u>UE Capability Information Confirm</u> Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY INFORMATION CONFIRM message.
<u>Protocol Error Information</u> - <u>Protocol Error Cause</u>	<u>Message extension not comprehended</u> ASN.1 violation or encoding error

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 ~~ASN.1 violation or encoding error~~" 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 ~~ASN.1 violation or encoding error~~" 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.

< Next Modified Section >

8.1.5.4 UE Capability in CELL_FACH state: Success

8.1.5.4.1 Definition

8.1.5.4.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network(s) supported by the UE. UTRAN initiates this procedure when it needs an update of the UE's UMTS capability information or of its inter-system classmark.
2. When the UE receives a UE CAPABILITY ENQUIRY message, the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH.
3. If during the execution of UE capability update procedure, an invalid UE CAPABILITY INFORMATION CONFIRM is received, the UE shall respond with RRC STATUS message and decide whether to re-transmit UE CAPABILITY INFORMATION message by comparing its internal counter against N304.

Reference

3GPP TS 25.331 clauses 8.1.6 and 8.1.7.

8.1.5.4.3 Test purpose

To confirm that the UE transmits a UE CAPABILITY INFORMATION message after it receives a UE CAPABILITY ENQUIRY message from the SS. 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 ~~an invalid 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](#) ~~IE "UE radio access capability"~~. 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 ~~an invalid~~ a UE CAPABILITY INFORMATION CONFIRM message [containing an unexpected critical message extension](#). ~~This message lacks all IEs except IE "Message Type"~~. The UE shall detect ~~a protocol~~ an error and send ~~an~~ RRC STATUS message to report this event. After [submitting this message to lower layers for transmission](#) ~~receiving the RLC layer acknowledgement PDU for this message~~, 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 The IE "Protocol error cause" found in IE "Protocol error information" shall be set to "ASN.1 violation or encoding error"
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 All IEs	Not Present
<u>RRC transaction identifier</u> <u>Integrity check info</u> - <u>Message authentication code</u> - <u>RRC Message sequence number</u> <u>Critical extensions</u>	<u>Arbitrarily selects an integer between 0 and 3</u> <u>The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE is present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs are omitted.</u> <u>SS calculates the value of MAC-I for this message and writes to this IE.</u> <u>SS provides the value of this IE, from its internal counter.</u> <u>'01'H</u>

RRC STATUS (Step 3)

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

Information Element	Value/remark
<u>Identification of received message</u> - <u>Received message type</u> - <u>RRC transaction identifier</u> Protocol Error Information - Protocol Error Cause	<u>UE Capability Enquiry</u> <u>Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.</u> Message extension not comprehended ASN.1 violation or encoding error

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 All IEs	'01'H Not Present

RRC STATUS (Step 10)

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

Information Element	Value/remark
Protocol Error Information ----- Protocol Error Cause	ASN.1 violation or encoding error"

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

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 ~~ASN.1 violation or encoding error"~~ 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 ~~ASN.1 violation or encoding error~~" 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.

< Next Modified Section >

8.1.7 Security mode command

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 ~~the stop~~ or start of ciphering or to command the restart of ciphering with the new ciphering configuration for the signalling radio bearers and any ~~of~~ 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 at 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. 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 the UE sends a SECURITY MODE FAILURE message when the SS transmits an incompatible simultaneous SECURITY MODE COMMAND messages to UE.~~ 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 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 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 ~~does not include any IEs except IE "Message Type"~~ 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 IEs "Ciphering mode info" and "Integrity protection mode info both omitted". ~~"Ciphering mode command" set to "stop"~~. 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 "Downlink activation time" IE for RB2 and "Integrity check info" IE. ~~Following that, the SS immediately transmit another valid SECURITY MODE COMMAND message to UE.~~ 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. ~~Upon the reception of the subsequent SECURITY MODE COMMAND message, the UE shall transmit SECURITY MODE FAILURE message to the SS with IE "failure cause" set to "incompatible simultaneous reconfiguration"~~. ~~The~~ Then UE shall transmit a SECURITY MODE COMPLETE message which contains the correct uplink activation times for RB2 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 ASN.1 violation or encoding error ".
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		←	SECURITY MODE COMMAND VOID	See specific message contents.
8		→	SECURITY MODE FAILURE VOID	IE "Failure Cause" shall be set to "Incompatible simultaneous reconfiguration".
9		→	SECURITY MODE COMPLETE	SS verifies that this message is sent using the old ciphering configuration unciphered . 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
RRC Message sequence number	Next RRC SN
Critical extensions All IEs	'01' Not Present

SECURITY MODE FAILURE (Step 3)

The same message found in [Annex A \[9\] \(TS 34.108\) 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 information Protocol error cause	Protocol error Message extension not comprehended ASN.1 violation or encoding error

SECURITY MODE COMMAND (Step 4)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
Message authentication code	Calculated result in SS
RRC Message sequence number	Next RRC SN
Security Capability	Same as originally sent by UE (and stored in SS)
Ciphering algorithm capability	
— UEA0	TRUE
— UEA1	TRUE
— Spare	FALSE
Integrity protection algorithm capability	
— UIA1	TRUE
— Spare	FALSE
Ciphering mode info	
- Ciphering mode command	Not Present
Integrity protection mode info	
Integrity protection mode command	Not Present Stop
Downlink integrity protection activation info	Start
Integrity protection algorithm	Not Present
Integrity protection initialisation number	UIA1
CN domain identity	CS Domain 0000-0000-0000-0000H (FRESH) Supported domain

SECURITY MODE FAILURE (Step 5)

The same message found in [Annex A\[9\] \(TS 34.108\) 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 ~~and 7~~)

See notes below for the value of Y.

Information Element	Value/remark
RRC transaction identifier	0 X
Integrity check info	Calculated result in SS
Message authentication code	<u>Next RRC SN</u> 0
RRC Message sequence number	<u>Same as originally sent by UE (and stored in SS)</u>
Security Capability	
Ciphering algorithm capability	
UEA0	TRUE
UEA1	TRUE
Spare	FALSE
Integrity protection algorithm capability	
UIA1	TRUE
Spare	FALSE
Ciphering mode info	
Ciphering mode command	Start/restart
Ciphering algorithm	<u>UEA1</u> Use one of the supported ciphering algorithms
Activation time for DPCH	<u>Current CFN + 225</u> Not Present
Radio bearer downlink ciphering activation time info	
<u>RB Identity</u>	<u>1</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
RB Identity	2
RLC sequence number	Current RLC SN + Y 4
<u>RB Identity</u>	<u>3</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
<u>RB Identity</u>	<u>4</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
Integrity protection mode info	
Integrity protection mode command	<u>Modify</u> Start
Downlink integrity protection activation info	Not Present
	<u>Current RRC SN for SRB0 + 2</u>
	<u>Current RRC SN for SRB1 + 2</u>
	<u>Current RRC SN for SRB2 + 2</u>
	<u>Current RRC SN for SRB3 + 2</u>
	<u>Current RRC SN for SRB4 + 2</u>
Integrity protection algorithm	UIA1
	<u>CS Domain</u> 0000-0000-0000-0000-H (FRESH)
	Supported domain
Integrity protection initialisation number	
CN domain identity	

Note X = 0 (Step 6), and Y = 1 4 (Step 6); Y = 100 (Step 7)

SECURITY MODE FAILURE (Step 8)

The same message found in Annex A shall be transmitted by the UE on the uplink DCCH, with the exception of the following IEs:

Information Element	Value/remark
RRC transaction identifier	<u>1</u>
Failure cause	
 Failure cause	Incompatible simultaneous reconfiguration

SECURITY MODE COMPLETE (Step 9)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	Checked to see if present
- 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	
- <u>RB Identity other than RB2</u>	<u>Check to see if the RLC SN for RB1, 3 and 4 are present</u>
- RB Identity	2
- RLC sequence number	SS records this value. See step 8-10 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 7, UE shall transmit SECURITY MODE FAILURE to SS to indicate an error due to incompatible simultaneous reconfiguration.~~

After step 8 the ~~UE shall RLC acknowledge the receipt of the first valid SECURITY MODE COMMAND message using unciphered mode and which includes calculated integrity check info.~~ SS checks that the SECURITY MODE COMPLETE message is received ~~unciphered~~ 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..

8.1.7.1b Security mode command in CELL_DCH state (PS Domain)8.1.7.1b.1 Definition8.1.7.1b.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 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 each 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

8.1.7.1b.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 UE receives an invalid SECURITY MODE COMMAND message.

8.1.7.1b.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_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 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. Then SS transmits a SECURITY MODE COMMAND message with IEs "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. Following that, the SS immediately transmits another valid SECURITY MODE COMMAND message to the UE. 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. Then 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. 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

<u>Step</u>	<u>Direction</u>		<u>Message</u>	<u>Comment</u>
	<u>UE</u>	<u>SS</u>		
1				RRC connected state on DCH state.
1a		←	<u>AUTHENTICATION AND CIPHERING REQUEST</u>	GMM message which will result in the generation of a new security keyset
1b		→	<u>AUTHENTICATION AND CIPHERING RESPONSE</u>	GMM
2		←	<u>SECURITY MODE COMMAND</u>	See message content.
3		→	<u>SECURITY MODE FAILURE</u>	IE "Failure Cause" shall be set to "Protocol Error" and IE "Protocol Error Information" shall be set to "Message extension not comprehended".
4		←	<u>SECURITY MODE COMMAND</u>	See message content.
5		→	<u>SECURITY MODE FAILURE</u>	IE "Failure Cause" shall be set to "invalid configuration".
6		←	<u>SECURITY MODE COMMAND</u>	See specific message contents.
7		→	<u>SECURITY MODE COMPLETE</u>	SS verifies that this message is sent using the old ciphering configuration. SS records the uplink ciphering activation time for RB 2.
8		←	<u>UE CAPABILITY ENQUIRY</u>	SS repeats step 8, 9 and 10 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.
9		→	<u>UE CAPABILITY INFORMATION</u>	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.
10		←	<u>UE CAPABILITY INFORMATION CONFIRM</u>	

Specific Message ContentsSECURITY MODE COMMAND (Step 2)

<u>Information Element</u>	<u>Value/remark</u>
<u>Integrity check info</u> <u>Message authentication code</u> <u>RRC Message sequence number</u> <u>Critical extensions</u>	Calculated result in SS Next RRC SN '01'H

SECURITY MODE FAILURE (Step 3)

The same message found in [9] (TS 34.108) Clause 9 shall be transmitted by the UE on the uplink DCCH, with the exception of the following IEs:

<u>Information Element</u>	<u>Value/remark</u>
<u>Failure cause</u>	
<u>Failure cause</u>	<u>Protocol error</u>
<u>Protocol error information</u>	
<u>Protocol error cause</u>	<u>Message extension not comprehended</u>

SECURITY MODE COMMAND (Step 4)

<u>Information Element</u>	<u>Value/remark</u>
<u>RRC transaction identifier</u>	<u>0</u>
<u>Integrity check info</u>	
<u>Message authentication code</u>	<u>Calculated result in SS</u>
<u>RRC Message sequence number</u>	<u>Next RRC SN</u>
<u>Security Capability</u>	<u>Same as originally sent by UE (and stored in SS)</u>
<u>Ciphering mode info</u>	<u>Not Present</u>
<u>Integrity protection mode info</u>	<u>Not Present</u>
<u>CN domain identity</u>	<u>PS Domain</u>

SECURITY MODE FAILURE (Step 5)

The same message found in [9] (TS 34.108) Clause 9 shall be transmitted by the UE on the uplink DCCH, with the exception of the following IEs:

<u>Information Element</u>	<u>Value/remark</u>
<u>Failure cause</u>	
<u>Failure cause</u>	<u>Invalid configuration</u>

SECURITY MODE COMMAND (Step 6)

See notes below for the value of Y.

<u>Information Element</u>	<u>Value/remark</u>
<u>RRC transaction identifier</u>	<u>X</u>
<u>Integrity check info</u>	
<u>Message authentication code</u>	<u>Calculated result in SS</u>
<u>RRC Message sequence number</u>	<u>Next RRC SN</u>
<u>Security Capability</u>	<u>Same as originally sent by UE (and stored in SS)</u>
<u>Ciphering mode info</u>	
<u>Ciphering mode command</u>	<u>Start/restart</u>
<u>Ciphering algorithm</u>	<u>UEA1</u>
<u>Activation time for DPCH</u>	<u>Not Present</u>
<u>Radio bearer downlink ciphering activation time info</u>	
<u>RB Identity</u>	<u>1</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
<u>RB Identity</u>	<u>2</u>
<u>RLC sequence number</u>	<u>Current RLC SN + 4</u>
<u>RB Identity</u>	<u>3</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
<u>RB Identity</u>	<u>4</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
<u>RB Identity</u>	<u>20</u>
<u>RLC sequence number</u>	<u>Current RLC SN + Y</u>
<u>Integrity protection mode info</u>	
<u>Integrity protection mode command</u>	<u>Modify</u>
<u>Downlink integrity protection activation info</u>	
	<u>Current RRC SN for SRB0 + 2</u>
	<u>Current RRC SN for SRB1 + 2</u>
	<u>Current RRC SN for SRB2 + 2</u>
	<u>Current RRC SN for SRB3 + 2</u>
	<u>Current RRC SN for SRB4 + 2</u>
<u>Integrity protection algorithm</u>	<u>UIA1</u>
<u>CN domain identity</u>	<u>PS Domain</u>

Note X = 0 (Step 6), and Y=1 (Step 6).

SECURITY MODE COMPLETE (Step 7)

<u>Information Element</u>	<u>Value/remark</u>
<u>RRC transaction identifier</u>	<u>0</u>
<u>Integrity check info</u>	
- <u>Message Authentication code</u>	<u>Checked to see if present</u>
- <u>RRC Message sequence number</u>	<u>Checked to see if present</u>
<u>Uplink integrity protection activation info</u>	
- <u>RRC message sequence number listRadio</u>	<u>Check to see if the RRC SN for RB 0 to RB 4 are present</u>
<u>bearer uplink ciphering activation info</u>	
- <u>RB Identity other than RB2</u>	<u>Check to see if the RLC SN for RB1, 3, 4 and 20 are present</u>
- <u>RB Identity</u>	<u>2</u>
- <u>RLC sequence number</u>	<u>SS records this value. See step 8 in 'expected sequence'</u>

8.1.7.1b.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.

At step 7 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 7 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 8 and step 10 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 state8.1.7.2.1 Definition8.1.7.2.2 Conformance requirement

1. This procedure is used to trigger the ~~stop or~~ start of ciphering, or to command the restart of ciphering with the new ciphering configuration for the signalling radio bearers and any ~~of~~ 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 ~~does not include any IEs except IE "Message-Type"~~ 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 ~~IE "Downlink activation time" for RB2~~ 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 ~~for RB2~~ 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 ASN.1 violation or encoding error ".
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 unciphered . 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	Calculated result in SS
Message authentication code	Next RRC SN
RRC Message sequence number	'01' Not Present
Critical extensions All IEs	

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	Calculated result in SS
— RRC Message sequence number	0
Security Capability	
— Ciphering algorithm capability	
— UEA0	TRUE
— UEA1	TRUE
— Spare	FALSE
— Integrity protection algorithm capability	
— UIA1	TRUE
— Spare	FALSE
Ciphering mode info	
— Ciphering mode command	Start/restart
— Ciphering algorithm	Use one of the supported ciphering algorithms
— Activation time for DPCH	Not Present
— Radio bearer downlink ciphering activation time info	
— RB Identity	2
— RLC sequence number	Current RLC SN + 4
Integrity protection mode info	
— Integrity protection mode command	Start
— Downlink integrity protection activation info	Not Present
— Integrity protection algorithm	UIA1 0000 0000 0000 0000 H (FRESH) Supported domain
— Integrity protection initialisation number	
CN domain identity	

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
— Message authentication code	Calculated result in SS
— RRC Message sequence number	Next RRC SN
Security Capability	Same as originally sent by UE (and stored in SS)
Ciphering mode info	
— Ciphering mode command	Start/restart
— Ciphering algorithm	UEA1
— Activation time for DPCH	Not Present
— Radio bearer downlink ciphering activation time info	
— RB Identity	1
— RLC sequence number	Current RLC SN + Y
— RB Identity	2
— RLC sequence number	Current RLC SN + 4
— 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	
— Integrity protection algorithm	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
CN domain identity	UIA1 PS Domain

Y=1 (Step 8)

SECURITY MODE COMPLETE (Step 9)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	Checked to see if present
- RRC Message sequence number	Checked to see if present
Uplink integrity protection activation info	
- RRC message sequence number list	Check to see if it 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 8-10 in 'expected sequence'

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 ~~UE shall RLC acknowledge the receipt of the SECURITY MODE COMMAND message using unciphered mode and which includes calculated integrity check info.~~ SS checks that the SECURITY MODE COMPLETE message is received ~~unciphered~~ [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.

[< Next Modified Section >](#)8.1.9 Signalling Connection Release [Request Indication](#)

8.1.9.1 Definition

8.1.9.2 Conformance requirement

The UE shall initiate the signalling connection release procedure when the higher layer entities in the UE request to release one or more signalling session (one example of such case is location update failure). In this case, the UE shall transmit a SIGNALLING CONNECTION RELEASE [REQUEST INDICATION](#) message, which includes the CN domain identity of the connection flow to be released.

Reference

3GPP TS 25.331 clause 8.1.14.

8.1.9.3 Test purpose

To confirm that the UE transmits a SIGNALLING CONNECTION RELEASE [REQUEST INDICATION](#) message after it fails to receive a response for the LOCATION UPDATING REQUEST message.

8.1.9.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: Switched off (state 1) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is turned on and it shall find a suitable cell to camp on. The UE shall initiate a location updating procedure. The UE shall establish an RRC connection and transmit a LOCATION UPDATING REQUEST message using the INITIAL DIRECT TRANSFER message. The SS does not respond to this message, and the UE shall send a SIGNALLING CONNECTION RELEASE ~~REQUEST INDICATION~~ message which includes the CN domain identity with the same value as that in the INITIAL DIRECT TRANSFER message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is powered on.
2		→	RRC CONNECTION REQUEST	UE shall initiate the location updating procedure.
3		←	RRC CONNECTION SETUP	
4				The UE configures the layer 2 and layer 1.
5		→	RRC CONNECTION SETUP COMPLETE	
6		→	INITIAL DIRECT TRANSFER (LOCATION UPDATING REQUEST)	Depending on supported CN domain, includes ATTACH REQUEST message (PS domain) or LOCATION UPDATE REQUEST (CS domain) message is emdedded in INITIAL DIRECT TRANSFER message. LOCATION UPDATE REQUEST is embedded in this message transmission.
7				The SS does not respond and waits until the timer for location update procedure or attach procedure expires.
8		→	SIGNALLING CONNECTION RELEASE REQUEST INDICATION	

Specific Message Content

SIGNALLING CONNECTION RELEASE ~~REQUEST INDICATION~~ (Step 8)

Information Element	Value/remark
CN domain identity	Check to see if this value is the as same as in the uplink INITIAL DIRECT TRANSFER message.

8.1.9.5 Test requirement

After step 1 the UE shall initiate the LOCATION UPDATING procedure ~~or ATTACH procedure~~ and establish an RRC connection.

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

CHANGE REQUEST

⌘ **34.123-1 CR 221** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to GMM test cases		
Source:	⌘ Ericsson, SONY, Nokia		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-22
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-4 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)

Reason for change: ⌘ To perform each test case some RRC signalling is necessary. For the specification of each test case to be complete and clear, it needs to indicate also the RRC signalling.

The value of the IE "Establishment cause" can not be tested on RRC test cases as the value is selected by NAS depending on the NAS procedures. Therefore it should be part of the expected test sequence of the NAS test cases.

Some terminology is GSM specific and does not apply for UMTS.

Summary of change: ⌘ Indications of necessary RRC signalling has been added:

- Establishment of RRC connection
- Release of RRC connection
- Security mode control

Paging and establishment cause values in the PAGING TYPE 1 and RRC CONNECTION REQUEST messages have been included. The values on the IE "Establishment cause" in the RRC CONNECTION REQUEST message are added as test requirement.

The test of GMM information/status to test assignment of new P-TMSI has been replaced with paging, since only the UEs not supporting the GMM information procedure will give a response (i.e. this was a negative test).

Terminology changes:

- "Operation mode A" -> "attach to both PS and non-PS services"
- "Operation mode C" -> "attach to PS services only"

Name of heading 12.3.1.5 changed to distinguish from 12.3.1.1 with the same name.
 Name of heading 12.6 changed, since the name was misleading (ciphering is not controlled by GMM for UMTS).

In 12.2.3.1.4, a clarification is added that the UE may send an ATTACH REQUEST when the Detach type = 're-attach not required', to make sure the SS will ignore such responses.

[From T1S-020266r1]:

Modification of the cell setting for cell activation and deactivation
 - In order to simplify the cell setting for cell activation and deactivation, "Off cell" is replaced with "Non-suitable cell".

Consequences if not approved: ⌘ The test specification will be unclear of which RRC signalling that is used in each test case.
 The values of the IE "Establishment cause" in the RRC CONNECTION REQUEST message specific for GMM will not be tested.

Clauses affected: ⌘ 12.2.1.1.4, 12.2.1.1.5, 12.3.1.1.4, 12.3.1.1.5, 12.3.1.2.4, 12.3.1.2.5, 12.3.1.5, 12.3.1.5.4, 12.3.1.5.5, 12.3.1.6.4, 12.3.1.6.5, 12.3.2.1.4, 12.3.2.1.5, 12.4.1.1.4, 12.4.1.1.5, 12.6, 12.6.1.1.4, 12.6.1.1.5, 12.7.1.4, 12.7.1.5, 12.9.1.4, 12.9.1.5, 12.9.2.4, 12.9.2.5

Other specs affected: ⌘ Other core specifications ⌘
 Test specifications
 O&M Specifications

Other comments: ⌘ Affects R99 and REL-4

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

12.2.1 Normal PS attach

The normal PS attach procedure is a GMM procedure used by PS UEs of UE operation mode A or C to IMSI attach for PS services only.

12.2.1.1 PS attach / accepted

12.2.1.1.1 Definition

12.2.1.1.2 Conformance requirement

- 1) If the network accepts the PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.
- 2) If the network accepts the PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- 3) If the network accepts the PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.3.1

12.2.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

- 1) P-TMSI / P-TMSI signature is allocated;
- 2) P-TMSI / P-TMSI signature is reallocated;
- 3) Old P-TMSI / P-TMSI signature is not changed.

12.2.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

- 1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI.
- 2) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS reallocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.
- 3) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the old P-TMSI.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		UE		The UE is set in UE operation mode C to attach to the PS services only (see ICS). If UE operation mode C this is not supported by the UE, goto step 26.
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks 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
<u>3a</u>		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
5		->	ATTACH COMPLETE	
<u>5a</u>		SS		The SS releases the RRC connection.
6		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services. Paging cause: Terminating interactive call
<u>6a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
<u>6a</u>		->	RRC CONNECTION REQUEST	
<u>6b</u>		<-	RRC CONNECTION SETUP	Void
<u>6c</u>		->	RRC CONNECTION SETUP	Void
			COMPLETE	Void
7		->	SERVICE REQUEST	Service type = "paging response"
<u>7a</u>		SS		The SS starts integrity protection and releases the RRC connection.
7a		<-	RRC CONNECTION	RELEASE
			RELEASE	Void
7b		->	RRC CONNECTION RELEASE	Void
			COMPLETE	Void
8		UE		The UE is switched off or power is removed (see ICS).
<u>8a</u>		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
9		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
<u>9a</u>		SS		The SS releases the RRC connection.
10		UE		The UE is powered up or switched on and initiates an attach (see ICS).
<u>10a</u>		SS		SS checks 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 = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
<u>11a</u>		SS		The SS starts integrity protection.
12		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
13		->	ATTACH COMPLETE	
14		<-	voidGMM INFORMATION	Message sent with P-TMSI-1
14b		->	voidGMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97

Step	Direction		Message	Comments
	UE	SS		
14c	<		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
14d		SS		SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.
15	<		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10 seconds.
17	UE			The UE is switched off or power is removed (see ICS).
17a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
18			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
18a		SS		The SS releases the RRC connection.
19		UE		The UE is powered up or switched on and initiates an attach (see ICS).
19a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
20			ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
20a		SS		The SS starts integrity protection.
21			ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1
22	<		PAGING TYPE1	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 Paging order is for PS services. PAGING TYPE 1 (used for NW mode II). Paging cause: Terminating interactive call
22a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
22a			RRC CONNECTION REQUEST	
22b			RRC CONNECTION SETUP	
22c			RRC CONNECTION SETUP COMPLETE	
23			SERVICE REQUEST	Service type = "paging response"
23aa		SS		The SS starts integrity protection and releases the RRC connection.
23a			RRC CONNECTION RELEASE	
23b			RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).
24a		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
25			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
25a		SS		The SS releases the RRC connection.
26	UE			The UE is set in UE operation mode A to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 25b.

Specific message contents

None.

12.2.1.1.5 Test requirements

At step 2a, 10a and 19a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a and 22a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating Interactive Call".

At step 8a, 17a and 24a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, 11 and 20, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Mobile identity in the ATTACH REQUEST message and on the Mobile identity in the ATTACH ACCEPT message.

Case 1) The Mobile identity in the ATTACH REQUEST message is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

At step5, UE shall:

- acknowledge the P-TMSI by sending the ATTACH COMPLETE message.

Case 2) The Mobile identity in the ATTACH REQUEST message is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the new P-TMSI.

At step13, UE shall:

- acknowledge the new P-TMSI by sending the ATTACH COMPLETE message.

At step23, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.1.1 PS detach / power off / accepted

12.3.1.1.1 Definition

12.3.1.1.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is switched off.

Reference

3GPP TS 24.008 clause 4.7.4.1

12.3.1.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C to attach to the PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 8.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>	SS			SS checks 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 = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
<u>3a</u>	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
5	->		ATTACH COMPLETE	
<u>5a</u>	SS			The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
<u>6a</u>	SS			SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
<u>7a</u>	SS			The SS releases the RRC connection.
8	UE			The UE is set in UE operation mode A to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 2 to step 7.

Specific message contents

None.

12.3.1.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, PS detach'.

12.3.1.2 PS detach / accepted

12.3.1.2.1 Definition

12.3.1.2.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is ordered to do so with MMI or AT commands.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.2.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

Test procedure

The UE performs a PS attach procedure.

The UE sends a DETACH REQUEST message to the SS.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C to attach to the PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks 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 = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
<u>3a</u>		SS		The SS starts integrity protection.
4		<-	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
<u>4a</u>		SS		The SS releases the RRC connection.
5			(void)	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
<u>6a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7		->	DETACH REQUEST	Detach type = 'normal detach, PS detach'
<u>7a</u>		SS		The SS starts integrity protection.
8		<-	DETACH ACCEPT	
<u>8a</u>		SS		The SS releases the RRC connection.
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11			(void)	
12	UE			The UE is set in UE operation mode A to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 10.

Specific message contents

None.

12.3.1.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall:

- sends the DETACH REQUEST message(without power off) to SS.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.3.1.5 PS detach / power off / accepted / PS/IMSI detach

12.3.1.5.1 Definition

12.3.1.5.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.5.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. The UE then deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
<u>3a</u>		SS		The SS starts integrity protection.
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
<u>5a</u>		SS		The SS releases the RRC connection.
6	UE			The UE is switched off (see ICS).
<u>6a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7		->	DETACH REQUEST	Detach type = 'power switched off, combined PS / IMSI detach'
<u>7a</u>		SS		The SS releases the RRC connection.

Specific message contents

None.

12.3.1.5.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE is switched off, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, combined PS / IMSI detach'.

12.3.1.6 PS detach / accepted / PS/IMSI detach

12.3.1.6.1 Definition

12.3.1.6.2 Conformance requirement

The UE detach the IMSI for PS and non-PS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.6.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.6.4 Method of test

Initial condition

System Simulator:

- One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service Yes/No
- UE operation mode A Yes/No
- Switch off on button Yes/No
- Automatic PS attach procedure at switch on or power on Yes/No
- User requested combined PS and non-PS detached without powering off Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE sends a DETACH REQUEST message to the SS. When the UE receives the DETACH ACCEPT, the UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A to attach to both the PS and non-PS services (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
3a	SS			The SS starts integrity protection.
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
5a	SS			The SS releases the RRC connection.
6	UE			The UE initiates a detach (without power off) by MMI or AT command (see ICS).
6a	SS			The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".
7	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
8	<-		DETACH ACCEPT	
8a	SS			The SS releases the RRC connection.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.6.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.2.1 PS detach / re-attach not required / accepted

12.3.2.1.1 Definition

12.3.2.1.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service	Yes/No
UE operation mode C	Yes/No
UE operation mode A	Yes/No (only if mode C not supported)
Switch off on button	Yes/No
Automatic PS attach procedure at switch on or power on	Yes/No

Test procedure

The UE performs a PS attach procedure.

The SS sends a DETACH REQUEST message to the UE. The UE then deletes the logical link.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		<p>The SS is set in network operation mode II. The UE is set in UE operation mode A or C to either attach to PS only or both the PS and non-PS services (see ICS). The UE is powered up or switched on and initiates an attach (see ICS). The SS checks 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 integrity protection. Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 The SS initiates a PS detach. Detach type = 're-attach not required' The SS releases the RRC connection. Mobile identity = P-TMSI-1 Paging order is for PS services. PAGING TYPE1 (used for NW-mode II). No response from the UE to the request except from a possible ATTACH REQUEST (UE may send an ATTACH REQUEST when the Detach type = 're-attach not required'). This is checked for 10 seconds.</p>
2		UE		
3		UE		
3a		SS		
4		->	ATTACH REQUEST	
4a		SS		
5		<-	ATTACH ACCEPT	
6		->	ATTACH COMPLETE	
7		SS		
8		<-	DETACH REQUEST	
9		->	DETACH ACCEPT	
9a		SS		
10		<-	PAGING TYPE1	
11		UE		

Specific message contents

None.

12.3.2.1.5 Test requirements

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall:

- send DETACH ACCEPT message to SS.

At step11, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain, except from a possible ATTACH REQUEST.

12.4.1.1 Routing area updating / accepted

12.4.1.1.1 Definition

12.4.1.1.2 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.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.1.3 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.

12.4.1.1.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells 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
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.

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 set in UE operation mode C to attach to PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
<u>3a</u>		<u>SS</u>		<u>The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u>
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
<u>4a</u>		<u>SS</u>		<u>The SS starts integrity protection.</u>
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6		->	ATTACH COMPLETE	
<u>6a</u>		<u>SS</u>		<u>The SS releases the RRC connection.</u>
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)
<u>7a</u>		<u>SS</u>		<u>The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u>
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
<u>8a</u>		<u>SS</u>		<u>The SS starts integrity protection.</u>
9		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
10		->	ROUTING AREA UPDATE COMPLETE	
11		←	void GMM INFORMATION	Message sent with P-TMSI-1
11b		→	void GMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97
<u>11c</u>		<u>SS</u>		<u>The SS releases the RRC connection.</u>
<u>11d</u>		<u><-</u>	<u>PAGING TYPE1</u>	<u>Mobile identity = P-TMSI-1</u> <u>Paging order is for PS services.</u>
<u>11e</u>		<u>SS</u>		<u>SS verifies that the UE transmits an RRC CONNECTION REQUEST message. SS will reject this request. The IE "Establishment cause" is not checked.</u>
12		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 PAGING TYPE1 (used for NW mode II). Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.

Step	Direction		Message	Comments
	UE	SS		
14		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
15	UE			Cell A is preferred by the UE.
15a		SS		<u>The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u>
16		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
16a		SS		<u>The SS starts integrity protection.</u>
17		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-2 signature Routing area identity = RAI-1
17a		SS		<u>The SS releases the RRC connection.</u>
18		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. <u>PAGING TYPE 1 (used for NW-mode II).</u> Paging cause = "Terminating interactive call"
18a		SS->	RRC CONNECTION REQUEST	<u>The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call"</u>
18b		←	RRC CONNECTION SETUPVoid	
18c		→	RRC CONNECTION SETUP COMPLETEVoid	
19		->	SERVICE REQUEST	service type = "paging response"
19aa		SS		<u>The SS starts integrity protection.</u>
19a		←SS	RRC CONNECTION RELEASE	<u>The SS releases the RRC connection.</u>
19b		→	RRC CONNECTION RELEASE COMPLETEVoid	
20		UE		The UE is switched off or power is removed (see ICS).
20a		SS		<u>The SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Detach".</u>
21		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
21a		SS		<u>The SS releases the RRC connection.</u>
22		UE		<u>The UE is set in UE operation mode A to attach to both the PS and non-PS services (see ICS) and the test is repeated from step 3 to step 21b.</u>
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.

12.4.1.1.5 Test requirements

At step 3a, 7a and 15a 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 20a 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.

12.6 PS authentication and ciphering

12.6.1 Test of authentication

The purpose of this procedure is to verify the user identity. A correct response is essential to guarantee the establishment of the connection. If not, the connection will drop.

12.6.1.1 Authentication accepted

12.6.1.1.1 Definition

12.6.1.1.2 Conformance requirement

A User Equipment shall correctly respond in an authentication and ciphering procedure by sending a response with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the authentication and ciphering procedure.

12.6.1.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).

Both cells are operating in network operation mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The SS checks the value RES sent by the UE in the AUTHENTICATION AND CIPHERING RESPONSE message.

The UE initiates a routing area updating procedure and the SS checks the value of the PS Ciphering Key Sequence Number sent by the UE in the ROUTING AREA REQUEST message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
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 " Off cell Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 17.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3a		SS		<u>SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u>
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
5		<-	AUTHENTICATION AND CIPHERING REQUEST	Request authentication.
6		->	AUTHENTICATION AND CIPHERING RESPONSE	Set PS-CKSN-1 RES
7		SS		The SS checks the RES value <u>and starts integrity protection.</u>
8		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
9		->	ATTACH COMPLETE	
9a		SS		<u>The SS releases the RRC connection.</u>
10		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Off cell Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
10a		SS		<u>SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".</u>
11		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
12		SS		The value of PS-CKSN is checked. <u>Integrity protection is started.</u>
13		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
14		->	ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16		->	DETACH REQUEST	Message not sent if power is removed.
16a		SS		Detach type = 'power switched off, PS detach' <u>The SS releases the RRC connection.</u>
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Off cell Non-Suitable cell". (see note)
18	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 16.
NOTE:	The definitions for " Off 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.

12.6.1.1.5 Test requirements

At steps 3a and 10a the UE shall transmit an RRC CONNECTION REQUEST message with the IE “Establishment cause” set to “Registration”.

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message form SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

At step11, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.7.1 General Identification

12.7.1.1 Definition

12.7.1.2 Conformance requirement

- 1) When requested by the network the User Equipment shall send its IMSI.
- 2) When requested by the network the User Equipment shall send its IMEI as stored in the Mobile Equipment.
- 3) When requested by the network the User Equipment shall send its IMEISV as stored in the Mobile Equipment.

Reference

3GPP TS 24.008 clauses 4.7.8

12.7.1.3 Test purpose

To verify that the UE sends identity information as requested by the system. The following identities can be requested: IMSI, IMEI and IMEISV.

12.7.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS requests identity information from the UE:

- IMSI
- IMEI
- IMEISV

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set in UE operation mode C to attach to PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 14.
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Registration".
3		->	ATTACH REQUEST	Attach type = 'PS attach'
4		←	void ATTACH ACCEPT	Attach result = 'PS only attached'
5		→	void ATTACH COMPLETE	Mobile identity = IMSI P-TMSI-1 signature Routing area identity = RAI-1
<u>5a</u>		SS		The SS starts ciphering and integrity protection.
6		<-	IDENTITY REQUEST	Identity type = IMSI
7		->	IDENTITY RESPONSE	Mobile identity = IMSI
8		<-	IDENTITY REQUEST	Identity type = IMEI
9		->	IDENTITY RESPONSE	Mobile identity = IMEI
10		<-	IDENTITY REQUEST	Identity type = IMEISV
11		->	IDENTITY RESPONSE	Mobile identity = IMEISV
<u>11a</u>		<-	ATTACH ACCEPT	Attach result = 'PS only attached'
				Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
<u>11b</u>		->	ATTACH COMPLETE	
<u>11c</u>		SS		The SS releases the RRC connection.
12		UE		The UE is switched off or power is removed (see ICS).
<u>12a</u>		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not received if power is removed).
13		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
<u>13a</u>		SS		The SS releases the RRC connection.
14		UE		The UE is set in UE operation mode A to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 13b.

Specific message contents

None.

12.7.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 12a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

At step9, when the SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

At step11, when the SS requests an IMEISV with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEISV.

12.9.1 Service Request Initiated by UE Procedure

12.9.1.1 Definition

12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

12.9.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid IMSI

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

- a) The UE in PMM-IDLE state sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.
- b) After the SS receives the SERVICE REQUEST message, the SS performs authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C to attach to PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks 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
<u>3a</u>		SS		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-1
5			ATTACH COMPLETE	
<u>5a</u>		SS		The SS releases the RRC connection.
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
<u>6a</u>		SS		The IE "Establishment cause" in the received RRC CONNECTION REQUEST message is not checked.
7			SERVICE REQUEST	Service type = "signalling",
8			AUTHENTICATION AND CIPHERING REQUEST	
9			AUTHENTICATION AND CIPHERING RESPONSE	
<u>9a</u>		SS		The SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
<u>10a</u>		SS		The SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST is set to "Detach" (not received if power is removed).
11			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
<u>11a</u>		SS		The SS releases the RRC connection.
12	UE			The UE is set in UE operation mode A to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11 <u>b</u> .

Specific message contents

None.

12.9.1.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE has any signalling message (e.g. for SM or SMS) that requires security protection, the UE shall:

- send the SERVICE REQUEST message with service type indicated "signalling".

12.9.2 Service Request Initiated by Network Procedure

12.9.2.1 Definition

12.9.2.2 Conformance requirement

When the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall send the SERVICE REQUEST message to the network.

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.2

12.9.2.3 Test purpose

To test the behavior of the UE if the UE receives the paging request for PS domain service from the network.

12.9.2.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid IMSI

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No

UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

- The UE is in PMM-IDLE state. The SS pages the UE by sending a Paging message to the UE.
- The UE sends a SERVICE REQUEST message to the SS. Service Type specifies Paging Response. The Service Request is carried over the radio in an RRC Direct Transfer message.
- After the SS receives the SERVICE REQUEST message from the UE, SS initiates an authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C to attach to PS services only (see ICS). If UE operation mode C that is not supported by the UE, goto step 12.
2	UE			The UE is powered up or switched in and initiates an attach (see ICS).
<u>2a</u>		SS		SS checks 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
<u>3a</u>		SS		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-1
5			ATTACH COMPLETE	
<u>5a</u>		SS		The SS releases the RRC connection.
6			PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. Paging cause = "Terminating interactive call"
<u>6a</u>		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to "Terminating interactive call".
7			SERVICE REQUEST	Service type = "Paging response"
8			AUTHENTICATION AND CIPHERING REQUEST	
9			AUTHENTICATION AND CIPHERING RESPONSE	
<u>9a</u>		SS		SS starts integrity protection and releases the RRC connection.
10	UE			The UE is switched off or power is removed (see ICS).
<u>10a</u>		SS		SS checks that the IE "Establishment cause" in any received RRC CONNECTION REQUEST message is set to "Detach" (message not sent if power is removed).
11			DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
<u>11a</u>		SS		The SS releases the RRC connection.
12	UE			The UE is set in UE operation mode A to attach to both PS and non-PS services (see ICS) and the test is repeated from step 2 to step 11b.

Specific message contents

None.

12.9.2.5 Test requirements

At step 2a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

At step 6a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Terminating interactive Call".

At step 10a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives a paging request for PS domain from the network in PMM-IDLE mode, the UE shall:

- send the SERVICE REQUEST message with service type indicated "paging response".

CHANGE REQUEST

⌘ **34.123-1 CR 222** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to SM test cases		
Source:	⌘ Ericsson, Nokia		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-22
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-4 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)

Reason for change:	⌘ To perform each test case some RRC signalling is necessary. For the specification of each test case to be complete and clear, it needs to indicate also the RRC signalling. The value of the IE "Establishment cause" can not be tested on RRC test cases as the value is selected by NAS depending on the NAS procedures. Therefore it should be part of the test requirement of the NAS test cases. Merge from Nokia CR in T1S-020205r1: Test cases updated and detailed. References to GSM deleted.
Summary of change:	⌘ Indications of which RRC procedures to perform by the SS have been included in the message sequences. Values on the IE "Establishment cause" in the RRC CONNECTION REQUEST message are added in the expected sequence. Merge from Nokia CR in T1S-020205r1: <ol style="list-style-type: none">11.1.1.1.2: References to GSM specific behaviour deleted from Conformance requirement.11.3.1.2: References to GSM specific behaviour deleted from Conformance requirement.11.3.2.2: References to GSM specific behaviour deleted from Conformance requirement.11.1.1.1.4: Test step 5 in Expected sequence detailed.

Consequences if not approved:	⌘ The test specification will be unclear of which RRC signalling that is used in each test case. The values of the IE "Establishment cause" in the RRC CONNECTION REQUEST message specific for SM will not be tested. Merge from Nokia CR in T1S-020205r1: Test cases are subject to possible misinterpretation. These test cases belong to 3GCF package 1.
--------------------------------------	--

Clauses affected:	⌘ 11.1.1.1.2, 11.1.1.1.4, 11.1.1.1.5, 11.3.1.2, 11.3.1.4, 11.3.1.5, 11.3.2.2, 11.3.2.4, 11.3.2.5
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Affects R99 and REL-4

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 Session Management Procedures

11.1 PDP context activation

11.1.1 Initiated by the UE

11.1.1.1 Attach initiated by context activation/QoS Offered by Network is the QoS Requested

11.1.1.1.1 Definition

11.1.1.1.2 Conformance requirement

PDP context activation shall initiate PS Attach by the UE to establish a GMM context, when the UE is PS Detached.

In order to request a PDP context activation, the UE sends an ACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP-ACTIVE-PENDING and starts timer T3380. The message contains the selected NSAPI, PDP type, requested QoS and, if the UE requests a static address, the PDP address.

If the QoS offered by the network is the same as the QoS requested by the UE, then upon receipt of the message ACTIVATE PDP CONTEXT ACCEPT the UE shall stop timer T3380.

In GSM, the MS shall initiate establishment of the logical link for the LLC SAPI indicated by the network with the offered QoS and selected radio priority level if no logical link has been already established for that SAPI.

In UMTS, both the network and the MSUE shall store the LLC SAPI and the radio priority in the PDP context.

A UE, which is capable of operating in both GSM and UMTS, shall use a valid LLC SAPI, while a UE which is capable of operating only in UMTS shall indicate the LLC SAPI value as "LLC SAPI not assigned" in order to avoid unnecessary value range checking and any other possible confusion in the network.

NOTE 1: The radio priority level and the LLC SAPI parameters, though not used in UMTS, shall be included in the messages, in order to support handover between UMTS and GSM networks.

Reference

3GPP TS 24.008 clauses 6.1.3.1 and 6.1.3.1.1.

11.1.1.1.3 Test purpose

To check that the UE initiates a PS attach, if one is not already active, when PDP context activation is requested.

To test the behaviour of the UE when SS responds to the PDP context activation request with the requested QoS.

11.1.1.1.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Specific message contents

None.

11.1.1.1.5 Test requirements

At step 0 the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Detach".

At step 3a the UE shall send an RRC CONNECTION REQUEST message with the IE Establishment cause set to "Registration".

When requesting a PDP context activation, the UE shall:

- initiate a PS ATTACH if one is not already active;
- when the SS responds to a PDP context activation request, initiated by the UE, with the requested QoS, the UE shall complete the PDP context activation procedure. To check if the PDP context activation was successful, SS shall request PDP context modification and UE shall accept it.

<End of modified section>

<Start of next 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

The DEACTIVATE PDP CONTEXT REQUEST message sent by UE 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:

... ~~#25: LLC or SMDCP failure (GSM only);~~

- #26: insufficient resources;
- #36: regular PDP context deactivation; or
- #37: QoS not accepted.

Upon receipt of the DEACTIVATE PDP CONTEXT ACCEPT message, the UE shall stop timer T3390.

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, 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.

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

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 SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE 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
<u>1a</u>		SS		<u>SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either <u>Originating Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call or Originating High Priority Signalling</u></u>
<u>1b</u>		→	<u>SERVICE REQUEST</u>	
<u>1c</u>		SS		<u>The SS starts ciphering and integrity protection.</u>
2		→	ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
<u>2a</u>		SS		<u>The SS establishes the RAB.</u>
3		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4	UE			Initiate a context deactivation
5		→	DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
6		←	DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation
<u>6a</u>		SS		<u>The SS releases the RAB.</u>
7		SS		Wait for T3390 seconds to ensure no further deactivate request messages are sent
8		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
9		→	SM STATUS	Cause set to #81

Specific message contents

None.

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 Conversational Call;
- Originating Streaming Call;
- Originating Interactive Call;
- Originating Background Call or
- Originating High Priority Signalling.

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.

Then, upon modification procedure initiated by the network, for deactivated PDP context, UE shall reply with SM STATUS message with cause #81.

11.3.2 PDP context deactivation initiated by the network

11.3.2.1 Definition

11.3.2.2 Conformance requirement

The DEACTIVATE PDP CONTEXT REQUEST message sent by SS 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:

....# 25: LLC or SMDCP failure (GSM only);

36: regular PDP context deactivation;

38: network failure; or

39: reactivation requested.

The UE shall, upon receipt of the DEACTIVATE PDP CONTEXT REQUEST message from network, reply with a DEACTIVATE PDP CONTEXT ACCEPT message.

Reference

3GPP TS 24.008 clauses 6.1.3.4, 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

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 send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE 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
1a		SS		SS checks that the IE "Establishment cause" in the received RRC CONNECTION REQUEST message is set to either <u>Originating Conversational Call, Originating Streaming Call, Originating Interactive Call, Originating Background Call or Originating High Priority Signalling</u>
1b		→	<u>SERVICE REQUEST</u>	
1c		SS		The SS starts ciphering and integrity protection.
2		→	ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
2a		SS		The SS establishes the RAB.
3		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4		←	DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
5		→	DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation.
5a		SS		The SS releases the RAB.
6		←	MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
7		→	SM STATUS	Cause set to #81

Specific message contents

None.

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 Conversational Call;
- Originating Streaming Call;
- Originating Interactive Call;
- Originating Background Call or
- Originating High Priority Signalling.

Upon receipt of a request for deactivation of a PDP context from the SS, the UE shall deactivate PDP context. 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.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020350

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020177

CR-Form-v4	
CHANGE REQUEST	
⌘ 34.123-1 CR 225 ⌘	ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.2.3		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 25 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ The current text contains outdated information		
Summary of change:	⌘ The conformance requirement and definition are updated. The Reference to the payload unit is removed (no longer part of R99 or REL-4) and the reference to 15 bit length indicators is deleted.		
Consequences if not approved:	⌘ Misleading text		

Clauses affected:	⌘ 7.2.2.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘ Affects both R99 and REL-4 specifications		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

7.2.2.3 Segmentation and reassembly / 7-bit Length Indicators / Padding

7.2.2.3.1 Definition

The RLC segments and concatenates SDUs into ~~payload units~~ UMD PDUs according to the PDU ~~payload unit~~ size requested by MAC. Length indicators are added to allow correct reconstruction of SDUs. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.2.3.2 Conformance requirement

A PDU that has unused space, to be referred to as padding, shall use a Length Indicator to indicate that this space is used as padding unless the padding size is one octet for PDUs with 15-bit LIs. A padding Length Indicator must be placed after any Length Indicators for a PDU.

One length indicator field shall be included for each end of a SDU that the PDU includes. The LI shall be set equal to the number of octets between the end of the header fields and the end of the segment. If padding is needed, another LI field set to only 1's shall be added ~~unless the padding size is one octet for PDUs with 15-bit LIs.~~

Reference(s)

TS 25.322 clauses 9.2.2.8 and 11.2.2.1.

7.2.2.3.3 Test purpose

1. To test that the UE correctly segments a large SDU and padding is added at the end.
2. To test that the UE correctly deals with a 7-bit padding LI when present in a received PDU.

7.2.2.3.4 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 UM 7-bit length indicator tests in clause 7.2.2.1.

These settings apply to both the uplink and downlink DTCH.

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to $UM_7_PayloadSize + 1$ bytes.

Test procedure

- a) The SS transmits an RLC SDU of size $UM_7_PayloadSize + 1$ bytes. The second of the 2 PDUs sent shall contain an LI indicating that padding is present.
- b) The SS checks the length indicator sizes and values of the RLC PDU returned on the uplink, and checks the length and content of the received RLC SDU.
- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1 & Padding
4		→	UPLINK RLC PDU	No LI
5		→	UPLINK RLC PDU	Check LIs and re-assembled SDU
6			RB RELEASE	Optional step

7.2.2.3.5 Test requirements

1. The UE shall return two RLC PDUs. The first shall have no LIs. The second shall have a LI indicating the PDU contains an SDU boundary after octet 1 of the data field, and the second shall indicate that the remainder of the PDU contains padding.
2. The length and data content of the received SDU should be the same as the transmitted SDU.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020351

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020178

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 226 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.2.6		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 25 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ The currently used value of an "invalid" length indicator is not the minimum invalid value.
Summary of change:	⌘ The value of the "invalid" length indicator is changed from payload_size+1 to payload_size, since this is the minimum value of the length indicator that is invalid. The reference to payload unit is removed (no longer part of R99 or REL-4)
Consequences if not approved:	⌘ The test is not aligned with TS 25.322

Clauses affected:	⌘ 7.2.2.6	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘ Affects both R99 and REL-4 specifications	

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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.

7.2.2.6 Reassembly / 7-bit Length Indicators / LI value > PDU size

7.2.2.6.1 Definition

The RLC segments and concatenates SDUs into ~~payload units~~ UMD PDUs according to the ~~PDU~~ payload-unit size requested by MAC. Length indicators are added to allow correct reconstruction of SDUs. The behaviour of the RLC on reception of an invalid LI value has been specified. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.2.6.2 Conformance requirement

If the length indicator of a PDU has a value that is larger than the PDU size – the number of octets containing LIs in the PDU – 1 and is not one of the predefined values listed in the table of 3GPP TS 25.322 clause 9.2.2.8, the PDU shall be discarded and treated as a missing PDU.

If a PDU with sequence number < VR(US) is missing then all SDUs that have segments in this PDU shall be discarded.

Reference(s)

TS 25.322 clauses 11.2.4.2 and 11.2.3.

7.2.2.6.3 Test purpose

To test that PDUs with length indicators that point beyond the end of the PDU are discarded by the receiving RLC.

7.2.2.6.4 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 UM 7-bit length indicator tests in clause 7.2.2.1.

These settings apply to both the uplink and downlink DTCH.

The radio bearer is placed into loop-back mode 1 with the UL SDU size set to UM_7_PayloadSize + 1 bytes.

Test procedure

- a) The SS transmits three RLC SDUs of size UM 7 PayloadSize + 1 bytes. All the SDUs are concatenated or segmented over successive RLC PDUs. In the third PDU for transmission, the SS sets value of the length indicator to be UM_7_PayloadSize + 1 (decimal).
- b) The SS checks the length indicator sizes and values of the RLC PDUs returned on the uplink, and checks the length and content of the received RLC SDUs.
- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1 & SDU 2
4		←	DOWNLINK RLC PDU	SDU 2 & SDU 3, with bad LI
5		←	DOWNLINK RLC PDU	SDU 3 and padding
6		→	UPLINK RLC PDU	SDU 1
7		→	UPLINK RLC PDU	SDU 1 and padding: Check Lis and re-assembled SDU
8			RB RELEASE	Optional step

7.2.2.6.5 Test requirements

The UE shall return two RLC PDUs. The first shall have no LIs. The second shall have a LI indicating the end of an SDU and an LI indicating that the remainder of the PDU contains padding.

The length and data content of the received SDU should be the same as the first transmitted SDU. No further SDUs or PDUs should be received.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020352

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020179r2

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 227 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ CR to 34.123-1; Correction to RLC conformance test 7.2.2.7		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 25 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ The current test does not test the intended behaviour with the special LI in TS 25.322. The main reason for using the special LI is to avoid discarding of an RLC SDU when the first received RLC PDU is different from zero (e.g. on CCCH).
Summary of change:	⌘ It is specified that the SS transmits RLC PDUs starting from SN=10 to emulate the behaviour on CCCH, where the first received RLC PDU in the UE can have any SN (typically different from zero). Editorial correction to 7.2.2.7.1 from Rohde & Schwarz CR in T1S-020125r1 included.
Consequences if not approved:	⌘ Intended behaviour in TS 25.322 not tested.

Clauses affected:	⌘ 7.2.2.7		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Affects both R99 and REL-4 specifications		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

7.2.2.7 Reassembly / 7-bit Length Indicators / First data octet LI

7.2.2.7.1 Definition

The RLC segments and concatenates SDUs into ~~payload units~~ UMD PDUs according to the ~~payload unit~~ PDU size requested by MAC. Length indicators are added to allow correct reconstruction of SDUs. A special LI is defined to indicate that the start of ~~an~~ SDU is coincident with the start of the PDU. The special LI is needed to avoid discarding of an SDU when the first received PDU has a sequence number different from zero. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.2.7.2 Conformance requirement

1. LI = 1111100, UMD PDU: The first data octet in this RLC PDU is the first octet of a RLC SDU.

2. Upon delivery of a set of UMD PDUs from the lower layer, the Receiver shall:

...

- if the special "Length Indicator" "1111 100" or "1111 1111 1111 100" is the first "Length Indicator" of a UMD PDU received on the downlink:

- consider the first data octet in this UMD PDU as the first octet of an RLC SDU.

Reference(s)

1. TS 25.322 clause 9.2.2.8

2. TS 25.322 clause 11.2.3.

7.2.2.7.3 Test purpose

To test that a UE in unacknowledged mode correctly handles a received RLC PDU with a 7-bit length indicator having its value equal to the special length indicator value 1111100 when the sequence number of the first received PDU is different from zero.

7.2.2.7.4 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 UM 7-bit length indicator tests in clause 7.2.2.1.

These settings apply to both the uplink and downlink DTCH.

The radio bearer is placed into UE test loop mode 1 with the UL SDU size set to 12 bytes.

Test procedure

- a) The SS transmits a RLC SDU of size 12 bytes in a PDU which has the 'First Data Octet LI' as the first LI in the PDU.
- b) The SS waits until the SDU has been received back from the UE, and then transmits another SDU of 12 bytes in a PDU which has the 'First Data Octet LI' as the first LI in the PDU.
- c) The SS waits until this SDU has been received back from the UE.
- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU, SN 10	SDU 1 with LI = 1111100
3			...	Wait for loopback
4		→	UPLINK RLC PDU	SDU 1
5		←	DOWNLINK RLC PDU, SN 11	SDU 2 with LI = 1111100
6		→	UPLINK RLC PDU	SDU 2
7			RB RELEASE	Optional step

[Note: The SS sends PDUs in downlink starting at sequence number 10.](#)

7.2.2.7.5

Test requirements

1. The UE shall return two RLC PDUs.
2. The length and data content of each received SDU should be the same as the transmitted SDU.

CR-Form-v4								
CHANGE REQUEST								
⌘	34.123-1 CR 228	⌘	ev	-	⌘	Current version:	4.2.0	⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Correction to RLC conformance test 7.2.3.5			
Source:	⌘	Ericsson, RAN2 (Nortel)			
Work item code:	⌘	TEI	Date:	⌘	2002-05-23
Category:	⌘	F	Release:	⌘	Rel-4
		<i>Use one of the following categories:</i>	<i>Use one of the following releases:</i>		
		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)	

Reason for change:	⌘	<ol style="list-style-type: none">1. Test Procedure does not match expected sequence and is not consistent with the purpose of the test.2. Make sure that a PDU is discarded when an incorrect LI is identified even if it is preceded by a correct LI.
Summary of change:	⌘	<ol style="list-style-type: none">1. Updated Definition and Conformance Requirement sections.2. Removed incorrect text relating to second LI in Test Procedure step a).3. Added "good" LI before the incorrect LI to the first PDU in test procedure step a) and expected sequence step 3.4. Removed second test requirement as being redundant
Consequences if not approved:	⌘	Some tests may be incorrectly implemented.

Clauses affected:	⌘	7.2.3.5		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
Other comments:	⌘	Effects R99 and Rel-4		

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.

7.2.3.5 Reassembly / 7-bit Length Indicators / Reserved LI value

7.2.3.5.1 Definition

The RLC segments and concatenates SDUs into ~~payload units~~ AMD PDUs according to the ~~payload unit~~ PDU size configured by RRC. Length indicators are added to allow correct reconstruction of SDUs. The behaviour of the RLC on reception of a reserved LI value ~~has been~~ is specified in the conformance requirement below. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.3.5.2 Conformance requirement

A "Length Indicator" is used to indicate the last octet of each RLC SDU ending within the PDU.

Except for the predefined values reserved for special purposes and listed in the tables below, the "Length Indicator" shall:

...

Length: 7 bits

<u>Bit</u>	<u>Description</u>
<u>1111100</u>	<u>UMD PDU: The first data octet in this RLC PDU is the first octet of an RLC SDU. AMD PDU: Reserved (PDUs with this coding will be discarded by this version of the protocol).</u>
<u>1111101</u>	<u>Reserved (PDUs with this coding will be discarded by this version of the protocol).</u>

~~Upon reception of an AMD PDU that contains Length Indicator value "1111100" or "1111101": PDUs with this coding will be discarded by this version of the protocol.~~

Reference(s)

TS 25.322 clause 9.2.2.8.

7.2.3.5.3 Test purpose

To test that PDUs with reserved length indicators are discarded by the receiving RLC.

7.2.3.5.4 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 Missing PDU Indicator	FALSE
---------------------------------------	-------

These settings apply to both the uplink and downlink DTCH.

Test procedure

- The SS transmits three concatenated RLC SDUs of size AM_7_PayloadSize + 1 bytes. In the second PDU, the SS sets the value of the first LI to correctly indicate the end of SDU1 and adds a second erroneous LI to with value 1111100. In the third PDU for transmission, the SS sets the value of the second (padding) LI to 1111101.
- The SS waits to receive a status report from the UE.

- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU #0	SDU 1
3		←	DOWNLINK RLC PDU #1	SDU 1 + SDU 2, good LI , LI = 1111100
4		←	DOWNLINK RLC PDU #2	SDU 2 + SDU 3, LI = 1111101
5		←	DOWNLINK RLC PDU #3	SDU 3 + poll
6		→	STATUS PDU	Nack PDUs 1 and 2
7			RB RELEASE	Optional step

7.2.3.5.5

Test requirements

1. The UE shall return a STATUS PDU indicating that PDUs with sequence numbers 1 and 2 were **incorrectly not** received.

~~2. No uplink SDUs shall be received.~~

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020354

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020183r1

CR-Form-v4	<h2 style="margin: 0;">CHANGE REQUEST</h2>
⌘ 34.123-1 CR 229 ⌘ ev - ⌘ Current version: 4.2.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.13		
Source:	⌘ Ericsson, RAN2 (Nortel), MCI		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-24
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ The conformance requirements and test procedure contains outdated statements and requirements. Explicit SNs are proposed to make writing of TTCN easier.
Summary of change:	⌘ The test is aligned with TS 25.322 to reflect that the UE may retransmit the RLC PDU with SN VT(S)-1 and previously transmitted but not acknowledged PDUs. It is clarified that polls will be transmitted in some steps of the expected sequence (see 25.322 section 9.7.1) The conformance requirement is updated and aligned with 25.322 (v 3.10.0). The test requirement is updated.
Consequences if not approved:	⌘ Test not aligned with 25.322. UEs conforming to core specifications will not pass the test.

Clauses affected:	⌘ 7.2.3.13
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Affects both R99 and REL-4 specifications

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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.

7.2.3.13 Control of Transmit Window

7.2.3.13.1 Definition

This test is to check that the UE is able to correctly control its RLC transmission window. Correct operation of RLC windowing is critical for acknowledged mode operation.

7.2.3.13.2 Conformance requirement

VT(MS) - Maximum Send state variable.

This state variable contains the "Sequence Number" of the first AMD PDU that can be rejected by the peer Receiver. $VT(MS) = VT(A) + VT(WS)$. This value represents the upper edge of the transmission window. The transmitter shall not transmit AMD PDUs with "Sequence Number" $\geq VT(MS)$ unless $VT(S) \geq VT(MS)$. In that case, the AMD PDU with "Sequence Number" = $VT(S) - 1$ can also be transmitted. $VT(MS)$ shall be updated when $VT(A)$ or $VT(WS)$ is updated.

~~The transmitter shall not transmit a PDU with $SN \geq VT(MS)$.~~

The receiver is always allowed to change the Tx window size of the peer entity during a connection, but the minimum and the maximum allowed value is given by RRC configuration. The Rx window of the receiver is not changed.

Reference(s)

TS 25.322, clauses 9.2.2.11.3 and 9.4.

7.2.3.13.3 Test purpose

To verify that the UE does not transmit PDUs with sequence numbers outside of the transmit window, except the PDU with $SN=VT(S)-1$, even when the transmit window size is changed by the receiver.

7.2.3.13.4 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 Transmission window size	8
--	---

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 W be the size of the transmit window.

The length of all transmitted SDUs is set to $AM_7_PayloadSize - 1$ bytes.

- a) The SS transmits $3*W$ RLC SDUs to the UE.
- b) The SS checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit STATUS PDUs for any other reason.

- c) After confirming that the UE has stopped transmitting new RLC SDUs for at least $(2 \cdot W \cdot TTI)$ ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far.
- d) The SS again checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit further STATUS PDUs for any other reason.
- e) After confirming that the UE has again stopped transmitting new RLC SDUs for at least $(2 \cdot W \cdot TTI)$ ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far, and containing a WINDOW command to reduce the UE transmit window size (W) to half its initial size.
- f) The SS checks the RLC SDUs received on the uplink, but does not reply to poll requests from the UE, or transmit STATUS PDUs for any other reason.
- g) After confirming that the UE has stopped transmitting new RLC SDUs for at least $(2 \cdot W \cdot TTI)$ ms, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far.
- h) The SS checks the RLC SDUs received on the uplink.
- i) The SS may optionally release the radio bearer.

NOTE: Window arithmetic is carried out modulo 4096.

The test procedure is run with the window transmit window size set to the default (8), and the repeated with the transmit window size set to 1536.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 2
4		←	DOWNLINK RLC PDU	SDU 3
5		←	DOWNLINK RLC PDU	SDU 4
6		←	...	SS continues to transmit RLC SDUs
7		←	DOWNLINK RLC PDU	SDU 3W
8		→	UPLINK RLC PDU	SDU 1
9		→	UPLINK RLC PDU	SDU 2
10		→	...	SS continues to receive RLC SDUs
11		→	UPLINK RLC PDU	SDU W + poll
12				No new transmissions from UE
13		←	STATUS PDU	
14		→	UPLINK RLC PDU	SDU W+1
15		→	UPLINK RLC PDU	SDU W+2
16		→	...	SS continues to receive RLC SDUs
17		→	UPLINK RLC PDU	SDU 2W + poll
18				No new transmissions from UE
19		←	STATUS PDU	WINDOW = W/2
20		→	UPLINK RLC PDU	SDU 2W+1
21		→	UPLINK RLC PDU	SDU 2W+2
22		←	...	SS continues to receive RLC SDUs
23		→	UPLINK RLC PDU	SDU 2W + W/2 + poll
24				No new transmissions from UE
25		←	STATUS PDU	
26		→	UPLINK RLC PDU	SDU 2W+W/2+1
27		→	UPLINK RLC PDU	SDU 2W+W/2+2
28		←	...	SS continues to receive RLC SDUs
29		→	UPLINK RLC PDU	SDU 3W + poll
30			RB RELEASE	Optional step

NOTE: The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

[Note: The polls in step 11, 17, 23 and 29 are transmitted as the last PDU in buffer trigger is set to TRUE and the transmitted PDU is the last PDU in the transmitter window, see TS 25.322 clause 9.7.1.](#)

7.2.3.13.5 Test requirements

From steps 8 to 11, the SDU contents reassembled from the uplink shall match those of the first W transmitted SDUs.

At step 12 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of [PDUs with sequence numbers from 0 to W-1](#) ~~the last transmitted PDU.~~

After step 13, the UE shall resume transmission of the next W SDUs. The contents of these SDUs shall match those of SDUs W+1 to 2*W sent on the downlink.

At step 18 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of PDU with sequence numbers from W to $2W-1$ ~~the last transmitted PDU~~.

After step 19, the UE shall resume transmission of the next $W/2$ SDUs. The contents of these SDUs shall match those of SDUs $2*W+1$ to $2*W+W/2$ sent on the downlink.

At step 24 there shall be no further transmission on the uplink DTCH whilst the SS is waiting, except for any repeats of PDU with sequence number from $2W$ to $W/2-1$ ~~the last transmitted PDU~~.

After step 25, the UE shall resume transmission of the next $W/2$ SDUs. The contents of these SDUs shall match those of SDUs $2*W+W/2+1$ to $3*W$ sent on the downlink.

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 230 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.6		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 26 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	<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)

Reason for change:	⌘ Align Definition and Conformance Requirement sections to core specs To create a better test.
Summary of change:	⌘ Updated Definition and Conformance Requirement sections. Reduced invalid LI size to test limit condition.
Consequences if not approved:	⌘ UEs may not discard PDUs with LIs that are too large.

Clauses affected:	⌘ 7.2.3.6		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Effects R99 and Rel-4		

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.

7.2.3.6 Reassembly / 7-bit Length Indicators / LI value > PDU size

7.2.3.6.1 Definition

The RLC segments and concatenates SDUs into ~~payload units-AMD PDUs~~ according to the ~~payload-unit~~PDU size configured by RRC. Length indicators are added to allow correct reconstruction of SDUs. The behaviour of the RLC on reception of an invalid LI value where the value is too large has been specified in the conformance requirement below. Incorrect operation of segmentation, concatenation, or coding of length indicators will result in failure of the UE to communicate.

7.2.3.6.2 Conformance requirement

If the "Length Indicator" of an AMD PDU has a value that is larger than the PDU size – RLC header size and is not one of the predefined values listed in the table of subclause 9.2.2.8, the Sender shall:

- discard that AMD PDU; and
- treat the discarded AMD PDU as missing.

~~If the length indicator of a PDU has a value that is larger than the PDU size—the number of octets containing LIs in the PDU—1 and is not one of the predefined values listed in the table of 3GPP TS 25.322 clause 9.2.2.8, the PDU shall be discarded and treated as a missing PDU.~~

Reference(s)

TS 25.322 clause 11.3.4.5.

7.2.3.6.3 Test purpose

To test that PDUs with length indicators that point beyond the end of the PDU are discarded by the receiving RLC.

7.2.3.6.4 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 Missing PDU Indicator	FALSE
---------------------------------------	-------

These settings apply to both the uplink and downlink DTCH.

Test procedure

- a) The SS transmits three RLC SDUs of size AM_7_PayloadSize + 1bytes. All the SDUs are concatenated or segmented over successive RLC PDUs. In the third PDU for transmission, the SS sets value of the length indicator to be AM_7_PayloadSize +1(decimal).
- b) The SS checks the length indicator sizes and values of the RLC PDUs returned on the uplink, and checks the content of the received STATUS PDU.
- c) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU #0	SDU 1
3		←	DOWNLINK RLC PDU #1	SDU 1 & SDU 2
4		←	DOWNLINK RLC PDU #2	SDU 2 & SDU 3, with bad LI
5		←	DOWNLINK RLC PDU #3	SDU 3, poll and padding
6		→	STATUS PDU	Nack PDU #2
7			RB RELEASE	Optional step

7.2.3.6.5 Test requirements

The UE shall indicate that the PDU with sequence number 2 was not received.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020356

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020182r1

CR-Form-v4	
CHANGE REQUEST	
⌘ 34.123-1 CR 231 ⌘	ev - ⌘
Current version: 4.2.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.12		
Source:	⌘ Ericsson, RAN2 (Nortel), R&S		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-24
Category:	⌘ F	Release:	⌘ Rel-4
	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)	

Reason for change:	⌘ The window size used in the current test case is not mandatory for UEs to support (support is indicated by RRC signalling, see 25.331)
Summary of change:	⌘ The transmitter and receiver window size is changed from 4095 to 2047 (the highest value mandatory to support). The conformance requirement is updated and aligned with v3.10.0 of TS 25.322
Consequences if not approved:	⌘ Tested value range not mandatory for UEs.

Clauses affected:	⌘ 7.2.3.12	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘
	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
Other comments:	⌘ Affects both R99 and REL-4 specifications	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

7.2.3.12 Correct use of Sequence Numbering

7.2.3.12.1 Definition

Peer RLC entities use sequence numbering to detect missing PDUs, and for flow control purposes. Incorrect operation of sequence numbering will result in failure of the UE to communicate.

7.2.3.12.2 Conformance requirement

PDUs are sequentially and independently numbered and may have the value 0 through n minus 1 (where n is the modulus of the sequence numbers). The modulus equals 2^{12} for AM ...; the sequence numbers cycle through the entire range: 0 through $2^{12} - 1$ for AM.

VT(S) - Send state variable.

This state variable contains the "Sequence Number" of the next AMD PDU to be transmitted for the first time (i.e. excluding retransmitted PDUs). It shall be updated after the aforementioned AMD PDU is transmitted. The initial value of this variable is 0.

~~If the PDU is transmitted for the first time, the Sequence Number field shall be set equal to VT(S) and VT(S) shall be updated~~

...

If the AMD PDU is transmitted for the first time, the Sender shall:

- set the "Sequence Number" field equal to VT(S);

Reference(s)

TS 25.322, clauses 9.4 and 11.3.2.1.

7.2.3.12.3 Test purpose

1. To verify that the UE transmits the first PDU with the Sequence Number field equal to 0.
2. To verify that the UE increments the Sequence Number field according to the number of PDUs transmitted.
3. To verify that the UE wraps the Sequence Number after transmitting the 2^{12} -1th PDU.
4. To verify that the UE receiver accepts PDUs with SNs that wrap around every 2^{12} -1th PDU.

7.2.3.12.4 Method of test

Initial conditions

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS34.108) 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 Transmission window size	2047 4095
Downlink RLC Receiving window size	2047 4095

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 $(2 * AM_7_PayloadSize) - 1$ bytes.

Test procedure

- a) ~~a)~~ The SS sends 2049 RLC SDUs to the UE, each of $(2 * AM_7_PayloadSize) - 1$ bytes. The SS polls for status on each 128th RLC PDU and the last PDU transmitted
- b) When the SS received an uplink PDU with the P bit set to 1, the SS transmits a STATUS PDU acknowledging all the RLC PDUs received so far.
- ~~b~~c) The SS checks the sequence numbers of the RLC PDUs it receives in the uplink
- ~~e~~d) The SS checks the content of the SDUs it receives from the UE.
- ~~d~~e) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU #0	
3		←	DOWNLINK RLC PDU #1	
			...	Transmission of DOWNLINK PDUs continues
4		→	UPLINK RLC PDU	SN should be set to 0
5		→	UPLINK RLC PDU	SN should be set to 1
		←	...	Transmission of DOWNLINK PDUs continues to SN = 127
6		←	DOWNLINK RLC PDU #127	Poll
7		→	UPLINK STATUS PDU	
		←	...	Transmission of DOWNLINK PDUs continues, polling every 128 th PDU, to SN = 4095
8		←	DOWNLINK RLC PDU #4095	SN=0
9		←	DOWNLINK RLC PDU #4096	SN=1, Poll
10		←	DOWNLINK RLC PDU #4097	
10a		→	<u>UPLINK RLC PDUs</u>	<u>Transfer of RLC PDUs continues to SN = 2046, poll</u>
10b		←	<u>STATUS PDU</u>	<u>ACK SN 0 to 2046</u>
10c		→	<u>UPLINK RLC PDUs...</u>	<u>Transfer of RLC PDUs continues to SN = 4093, Poll</u>
10d		←	<u>STATUS PDU</u>	<u>ACK SN 2047 to 4093</u>
10e		→	<u>UPLINK RLC PDU</u>	<u>SN should be set to 4094</u>
		→	...	Transfer of RLC PDUs continues to SN = 4095
11		→	UPLINK RLC PDU	SN should be set to 4095
12		→	UPLINK RLC PDU	SN should be set to 0
13		→	UPLINK RLC PDU	SN should be set to 1, Poll
14		←	DOWNLINK STATUS PDU	
15			RB RELEASE	Optional step

NOTE: The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.12.5 Test requirements

- The first PDU received should have the SN field set to 0. The second PDU should have the SN field set to 1, and the 4 097th PDU should have the SN field set to 0.
- The size and data content of the received SDUs shall match those of the transmitted SDUs.

CHANGE REQUEST

⌘ **34.123-1 CR 232** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.14		
Source:	⌘ Ericsson, R&S, RAN2 (Nortel)		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-24
Category:	⌘ F Use <i>one</i> 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-4 Use <i>one</i> 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)

Reason for change:	⌘ UE will unable to transmit PDU containing SDUW+2. Missing test of requirement that poll bit should be taken into account by UE even if PDU is discarded. SN=2W+1 is not the first SN outside the reception window. Limit not tested.
Summary of change:	⌘ Added Poll on uplink SDU W (step 10) and corresponding STATUS PDU to advance VT(A) in UE before SDUW+2 can be transmitted. Added further test to ensure poll bit is taken into account by UE even if PDU is discarded. SN of SDU W+1 is changed to be 2W
Consequences if not approved:	⌘ Test will not work as specified. Missing test for conformance requirement.

Clauses affected:	⌘ 7.2.3.14
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Effects R99 and Rel-4

How to create CRs using this form:

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.2.3.14 Control of Receive Window

7.2.3.14.1 Definition

This test is to check that the UE is able to correctly control its RLC receive window. Correct operation of RLC windowing is critical for acknowledged mode operation.

This test applies to all UE.

7.2.3.14.2 Conformance requirement

Upon reception of an AMD PDU with "Sequence Number" outside the interval $VR(R) \leq SN < VR(MR)$, the Receiver shall:

- discard the AMD PDU;
- if the "polling bit" in the discarded AMD PDU is set to "1":
- initiate the STATUS PDU transfer procedure.

~~Upon reception of a PDU with $SN < VR(R)$ or $SN \geq VR(MR)$ the receiver shall discard the PDU.~~

Reference(s)

TS 25.322, clause 11.3.4.2.

7.2.3.14.3 Test purpose

1. To verify that the UE discards PDUs with sequence numbers outside the upper boundary of the receive window.

7.2.3.14.4 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 Transmission window size	8
Downlink RLC Missing PDU Indicator Receiving window size	FALSE 8

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 W be the size of the receive window.

The length of all transmitted SDUs is set to AM_7_PayloadSize - 1 bytes.

- a) The SS transmits W RLC SDUs to the UE, polling only on the last RLC PDU.
- b) The SS checks the RLC SDUs received on the uplink, responding to poll requests with acknowledgements, ~~and~~ Then after receiving the STATUS PDU from the UE it transmits a further RLC SDU with the poll bit set. The SS

sets the sequence number for the associated RLC PDU above the top of the receive window, for example, $2*W+1$.

c) The SS receives a STATUS PDU from the UE.

ed) The SS transmits a further RLC SDU with the sequence number set to the value of the next sequence number within the receive window.

de) The SS checks the RLC SDUs received on the uplink.

ef) The SS may optionally release the radio bearer.

This test case is run once for the default receive window size (8) and again with the receive window size set to 1536.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1, SN = 0
3		←	DOWNLINK RLC PDU	SDU 2, SN = 1
4		←	...	SS continues to transmit RLC SDUs
5		←	DOWNLINK RLC PDU	SDU W + Poll, SN = W-1
6		→	STATUS PDU	
7		→	UPLINK RLC PDU	SDU 1
8		→	UPLINK RLC PDU	SDU 2
9			...	UE continues to transmit RLC SDUs
10		→	UPLINK RLC PDU	SDU W, <u>Poll</u>
10a		←	<u>STATUS PDU</u>	
11		←	DOWNLINK RLC PDU	SDU W+1, SN = $2W+1$, <u>Poll</u>
11a		→	<u>STATUS PDU</u>	
12		←	DOWNLINK RLC PDU	SDU W+2, SN = W
13		→	UPLINK RLC PDU	SDU W+2
14			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.14.5 Test requirements

1. The SS shall receive back SDUs 1 to W, and SDU W + 2 only. No other SDUs shall be looped back.

2. The SS shall receive a STATUS PDU in step 11a. SN=2W shall not be indicated as received in the STATUS PDU. Negative acknowledgements shall not be indicated for SN=W to 2W-1 either.

3GPP TSG-T1 #15
Lund, Sweden, 21-24 May 2002

Tdoc T1-020358

3GPP TSG-T1/SIG Meeting #22
Helsinki, Finland, 9th-11th April 2002

Tdoc T1S-020185r1

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 233 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.16		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 25 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	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)

Reason for change:	⌘ In the current test it is not clear in which PDUs the poll bit shall be set by the UE
Summary of change:	⌘ It is clarified that the poll bit shall only be set in step 11 and not in any other step. The conformance requirement is updated and aligned with v3.10.0 of TS 25.322 Editorial correction to 7.2.3.16.3 from Rohde & Schwarz CR in T1S-020125r1 included.
Consequences if not approved:	⌘ Unclear specification

Clauses affected:	⌘ 7.2.3.16		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Affects both R99 and REL-4 specifications		

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.

7.2.3.16 Polling for status / Last PDU in retransmission queue

7.2.3.16.1 Definition

This case tests that the UE will poll for a status request on the last PDU in its retransmission queue when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.16.2 Conformance requirement

Last PDU in Retransmission buffer.

The Sender triggers the Polling function when the last AMD PDU to be retransmitted and is allowed to transmit according to subclause 3GPP TS 25.322 clause 11.3.2.2 is submitted to lower layer.

...

- AMD PDUs are only allowed to transmit:

- if the AMD PDU has a "Sequence Number" < VT(MS); or
- if the AMD PDU has a "Sequence Number" equal to VT(S)-1; and
- if the AMD PDU is not restricted to be transmitted by the local suspend function, see 3GPP TS 25.322 subclause 9.7.5.

...

The Sender shall:

- if a poll has been triggered by one or several poll triggers (see 3GPP TS 25.322 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".

~~The Polling bit shall be set to 1 if any of following conditions are fulfilled except when the poll prohibit function is used and the timer Timer_Poll_Prohibit is active:~~

- ~~1) ...~~
- ~~2) Last PDU in retransmission buffer is used and the last PDU to be retransmitted is transmitted.~~

Reference

25.322 clause 11.3.2.1.1., [9.7.1](#) and [11.3.2](#)

7.2.3.16.3 Test purpose

1. To verify that a poll is performed when only one PDU is available for retransmission, and the poll prohibit timer ~~is~~ function is not used.
2. To verify that a poll is performed when only one PDU is available for retransmission, and the poll prohibit timer ~~is~~ function is used, but inactive.

7.2.3.16.4 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	First run	Second run
Timer_poll_prohibit	disabled	200
Last transmission PDU poll	FALSE	FALSE
Last retransmission PDU poll	TRUE	TRUE

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 $(2 * AM_7_PayloadSize) - 1$ bytes.

Test procedure

- a) The SS transmits an RLC SDU of length $(4 * AM_7_PayloadSize) - 1$ bytes to the UE.
- b) The SS checks the uplink RLC PDUs for a poll for status flag.
- c) The SS transmits a STATUS PDU negatively acknowledging the first uplink RLC PDU as missing.
- d) The SS waits for the RLC PDU to be retransmitted and then checks the uplink RLC PDU for a poll for status flag.
- e) The SS may optionally release the radio bearer.

The test is repeated using the RLC parameters given in the Second run column of the configuration table for the initial conditions.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1
4		←	DOWNLINK RLC PDU	SDU 1
5		←	DOWNLINK RLC PDU	SDU 1 + Poll
6		→	STATUS PDU	
7		→	UPLINK RLC PDU	SDU 1, SN=0
8		→	UPLINK RLC PDU	SDU 1, SN=1
9		←	STATUS PDU	NAK: SN=0
10		...		Wait for retransmission
11		→	UPLINK RLC PDU	SDU 1, SN=0 + Poll
12		←	STATUS PDU	
13			RB RELEASE	Optional step

7.2.3.16.5 Test requirements

The Poll bit shall be set in the AMD PDU header of the PDU returned in step 11. [The poll bit shall not be set in the AMD PDU header of other PDUs.](#)

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 234 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.17		
Source:	⌘ Ericsson, Rohde & Schwarz, Nortel		
Work item code:	⌘ TEI	Date:	⌘ 26 th March 2002
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-4 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)

Reason for change:	⌘ Outdated conformance requirements. Changes to the test procedure and clarifications		
Summary of change:	⌘ Updated conformance requirements. Editorial changes to references Editorial changes to Test Procedure and Expected Sequence		
Consequences if not approved:	⌘ Outdated conformance requirements		

Clauses affected:	⌘ 7.2.3.17		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘ Effects R99 and Rel-4		

How to create CRs using this form:

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

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

7.2.3.17 Polling for status / Poll every Poll_PDU PDUs

7.2.3.17.1 Definition

This case tests that the UE will poll for a status request every Poll_PDU PDUs when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.17.2 Conformance requirement

VT(PDU).

This state variable is used when the "poll every Poll_PDU PDU" polling trigger is configured. It shall be incremented by 1 for each AMD PDU that is transmitted including both new and retransmitted AMD PDUs. When it becomes equal to the value Poll_PDU, a new poll shall be transmitted and the state variable shall be set to zero.

The initial value of this variable is 0.

Poll_PDU.

This protocol parameter indicates how often the transmitter shall poll the Receiver in the case where "polling every Poll_PDU PDU" is configured by upper layers. It represents the upper limit for the state variable VT(PDU). When VT(PDU) equals the value Poll_PDU a poll shall be transmitted to the peer entity.

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".

~~VT(PDU) should be incremented for both new and retransmitted PDUs. When it reaches Poll_PDU a new poll is transmitted and the state variable is set to zero.~~

~~The Polling bit shall be set to 1 if ... Every Poll_PDU PDU is used and when VT(PDU)=Poll_PDU~~

Reference

TS 25.322 clauses 9.4, 9.6 and 11.3.2.1.1., 9.7.1

7.2.3.17.3 Test purpose

1. To verify that a poll is performed when VT(PDU) reaches Poll_PDU.
2. To verify VT(PDU) is incremented for both new and retransmitted PDUs.

7.2.3.17.4 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 Poll_PDU Last transmission PDU poll Last retransmission PDU poll	4 FALSE FALSE
--	---------------------

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 the value of Poll_PDU be P:

- a) The SS sends $3 * P - 2$ RLC SDUs of size AM_7_PayloadSize - 1 bytes to the UE in PDUs with sequence numbers that are contiguous, starting from zero.
- b) The SS checks the sequence numbers and polling bits of the RLC ~~SDUs~~ PDUs returned on the uplink.
- c) The SS sends a STATUS PDU negatively acknowledging two RLC PDUs with a sequence numbers of already received PDUs. The other PDUs are acknowledged as received correctly.
- d) The SS checks the sequence numbers and polling bits of the RLC SDUs returned on the uplink.
- e) The SS terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		DOWNLINK RLC PDU	SDU 1
2	←		DOWNLINK RLC PDU	SDU 2
3	←		...	SS continues to transmit RLC SDUs
4	←		DOWNLINK RLC PDU	SDU 3P – 2
5	→		UPLINK RLC PDU	SDU 1, <u>SN=0</u>
6	→		UPLINK RLC PDU	SDU 2, <u>SN=1</u>
7	→		...	SS continues to receive RLC SDUs
8	→		UPLINK RLC PDU	SDU P, Poll
9	←		STATUS PDU	NAK SN=0 and SN=1
10	→		UPLINK RLC PDU	SDU 1, <u>SN=0</u>
11	→		UPLINK RLC PDU	SDU 2, <u>SN=1</u>
12	→		UPLINK RLC PDU	SDU P+1
13	→		...	SS continues to receive RLC SDUs
14	→		UPLINK RLC PDU	SDU 2P – 2, Poll
15	→		...	SS continues to receive RLC SDUs
16	→		UPLINK RLC PDU	SDU 3P – 2, Poll
17			RB RELEASE	Optional step

Note: Due to retransmissions it is not possible to determine the the exact PDU that a poll is received on. i.e A poll may be received on a retransmitted PDU or a PDU transmitted for the first time.

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.17.5 Test requirements

The SS shall receive a poll for status every Poll PDU ~~in the~~ RLC PDUs sent on the uplink ~~in steps 8, 14 and 16 above~~.

CHANGE REQUEST

⌘ **34.123-1 CR 235** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.19		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 26 th March 2002
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-4 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)

Reason for change:	⌘ 1. It's not possible to state the SN where the first poll will be received, as Timer_Poll_Periodic starts when the RLC entity is created and not after the first uplink PDU is transmitted. 2. The number of SDUs sent in Test Procedure step b) needs to be made TTI dependent to match with the rest of the test procedure. Also, not enough PDUs will be sent to complete the test. 3. Loopback and other processing delays in the UE may result in some uplink TTIs not containing loopedback SDUs. Therefore undermining the SN to poll relationship in the Test Procedure and Expected Sequence. 4. Limited window size will need protocol to send poll/acks to complete test. Expected sequence will also be different. 5. Unwanted poll may occur between steps 13 and 16 due to last retransmission PDU poll.
Summary of change:	⌘ 1. Removed comment in Expected Sequence that first poll occurs when SN=ceil(T/TTI), and replaced with SN=x. 2. Changed number of PDUs sent in Test Procedure step b) to 4*T/TTI. 3. Packed downlink SDUs, 2 to 1 PDU, to ensure that there are always some PDUs queued in the uplink after the first is transmitted. Thus ensuring that every uplink TTI opportunity contains a unique PDU without retransmissions. 4. Increased uplink and downlink window size from default 128 to 256 to ensure polls and acks are not needed to complete test as specified for 2 nd run. 5. Disable last retransmission PDU poll.
Consequences if not approved:	⌘ UEs will fail the test.

Clauses affected:	⌘ 7.2.3.19
--------------------------	------------

Other specs affected:	⌘ <input type="checkbox"/>	Other core specifications	⌘	
	<input type="checkbox"/>	Test specifications		
	<input type="checkbox"/>	O&M Specifications		
Other comments:	⌘	Effects R99 and Rel-4		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

7.2.3.19 Polling for status / Timer triggered polling (Timer_Poll_Periodic)

7.2.3.19.1 Definition

This case tests that the UE will poll for a status request every Timer_Poll_Periodic ms when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.19.2 Conformance requirement

Each time the timer expires, the timer is restarted and a poll is triggered (either by the transmission of a PDU which was not yet sent, or by a retransmission). If there is no PDU to be transmitted and all PDUs have already been acknowledged, a poll shall not be triggered and the timer shall only be restarted. The value of the timer is signalled by RRC.

The Polling bit shall be set to 1 if ... timer based polling is used and Timer_Poll_Periodic has expired.

Reference

TS 25.322 clauses 9.5 and 11.3.2.1.1.

7.2.3.19.3 Test purpose

1. To verify that the UE polls the SS in the next PDU to be transmitted or retransmitted each time the Timer_Poll_Periodic timer expires.
2. To verify that if there is no PDU to be transmitted, and all the PDUs have already been acknowledged, the timer is restarted, but no poll is sent.

7.2.3.19.4 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	First run	Second run
Last retransmission PDU poll	FALSE	FALSE
Last transmission PDU poll	FALSE	FALSE
Timer_poll_periodic	100	2000

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 Timer_Poll_Periodic:

- a) The SS waits for at least 2*T ms before starting any transmissions, and monitors the uplink.
- b) The SS sends $\frac{T-4}{T} * \frac{0.4(T/TTI)}$ RLC SDUs of size $(\text{AM}_7_PayloadSize/2) - 1$ bytes, to the UE. [The SDUs are packed 2 SDUs to one PDU.](#)
- c) The SS waits for the first PDU to be received with the P bit set, records the arrival time (T_1) and responds with a STATUS PDU normally.

- d) The SS waits for the reception of the next PDU with the P bit set, records the arrival time (T_2), and then transmits a STATUS PDU reporting that none of the uplink PDUs were correctly received, except for the last PDU with SN = $\text{ceil}(2T/TTI)$ containing the poll bit which is acknowledged.
- e) The SS waits for the next PDU received with the P bit set, and records the arrival time (T_3).
- f) The SS waits for the reception of the next PDU with the P bit set and records the arrival time (T_4).
- g) The SS may optionally release the radio bearer.

The Test is repeated using the parameters specified for the second run.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1, <u>SDU2</u>
2		←	...	SS continues to transmit RLC SDUs
3		←	DOWNLINK RLC PDU	<u>SDU $4*(T/TTI)-1$</u> SDU 0-1 <u>$4*(T/TTI)$</u>
4		→	UPLINK RLC PDU	SDU 1
5		→	UPLINK RLC PDU	SDU 2
6		→	...	SS continues to receive RLC PDUs
7		→	UPLINK RLC PDU	SN = x <u>$x + \text{ceil}(T/TTI)$</u> , Poll: Note T ₁
8		←	STATUS PDU	ACK SN 0 to SN x <u>$x + \text{ceil}(T/TTI)$</u>
9		→	UPLINK RLC PDU	SN = <u>$x + \text{ceil}(T/TTI) + 1$</u>
10		→	...	SS continues to receive RLC PDUs
11		→	UPLINK RLC PDU	SN = <u>$x + \text{ceil}(2T/TTI)$</u> , Poll: Note T ₂
12		←	STATUS PDU	NAK SN x <u>$x + \text{ceil}(T/TTI) + 1$</u> to SN <u>$x + \text{ceil}(2T/TTI) - 1$</u>
13		→	UPLINK RLC PDU	PDUs including some retransmissions
14		→	UPLINK RLC PDU	
15		→	...	SS continues to receive RLC PDUs
16		→	UPLINK RLC PDU	Poll: Note T ₃
17		←	STATUS PDU	Normal
18		→	...	SS continues to receive RLC PDUs
19		→	UPLINK RLC PDU	Poll: Note T ₄
20			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

Note: The value of x may be different for each iteration.

7.2.3.19.5 Test requirements

No PDUs shall be received from the UE for $2*T$ ms before step 1.

$x \leq \text{ceil}(T/TTI)$.

Time $T_2 - T_1$ ~~should~~ shall be T.

Time $T_3 - T_2$ ~~should~~ shall be T.

Time $T_4 - T_3$ ~~should~~ shall be T.

- 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.

7.2.3.20 Polling for status / Polling on Poll_Window% of transmission window

7.2.3.20.1 Definition

This case tests that the UE will poll for a status request when it has reached Poll_Window% of the transmission window, when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

This test applies to all UE.

7.2.3.20.2 Conformance requirement

~~The Polling bit shall be set to 1 if ... Window based polling is used, , and $J \geq \text{Poll_Window}$, where J is:~~

1. A poll is triggered for each AMD PDU when $J \geq \text{Poll_Window}$, where J is the window transmission percentage defined by

~~$$J = \frac{(4096 + \text{VT}(S) - \text{VT}(A)) \bmod 4096}{\text{VT}(WS)} * 100 ,$$~~

$$J = \frac{(4096 + \text{VT}(S) + 1 - \text{VT}(A)) \bmod 4096}{\text{VT}(WS)} * 100 ,$$

where the constant 4096 is the modulus for AM described in 3GPP TS 25.322 subclause 9.4 and VT(S) is the value of the variable before the AMD PDU is submitted to lower layer. ~~where the constant 4096 is the modulus for AM described in 3GPP TS 25.322 clause 9.4.~~

2. The Polling function is used by the Sender to request the peer RLC entity for a status report. The "Polling bit" in the AMD PDU indicates the poll request. There are several triggers for initiating the Polling function. Which of the triggers shall be used is configured by upper layers for each RLC entity. The following triggers can be configured:

.....

6) Window based.

The Sender triggers the Polling function when the condition described in subclause 9.6 d) ("Poll Window") is fulfilled.

3. 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";

Reference

25.322 clauses 9.6, 9.7.1 and 11.3.2.1.1.

7.2.3.20.3 Test purpose

- ~~1-~~ To verify that the UE polls the SS ~~once-when~~ the window based polling ~~equation-condition~~ $J \geq \text{Poll_Window}$ is satisfied fulfilled.

7.2.3.20.4 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	
Last transmission PDU poll	FALSE
Poll_Window	50
Transmission window size	8
Downlink RLC	
Receiving window size	8

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 W be the size of the transmission window.

- a) The SS transmits $(W/2) + 2$ RLC SDUs of size AM_7_PayloadSize - 1 bytes.
- b) The SS checks the sequence number of the first three uplink PDUs ~~to be~~ received with the P bit set.
- c) The SS sends another RLC SDU of size AM_7_PayloadSize - 1 bytes.
- d) The SS checks the sequence number of the next uplink PDU ~~to be~~ received with the P bit set.
- e) The SS ~~shall~~ waits until no more new PDUs are received.
- f) The SS sends a STATUS PDU acknowledging the ~~first five received~~ received RLC PDUs ~~received~~ with SN = 0 through W/2, followed by two further RLC SDUs.
- g) The SS checks the sequence number of the next uplink PDU ~~to be~~ received with the P bit set.
- h) 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 $W/2+2$
4	→		UPLINK RLC PDU	SDU 1, SN=0
5	→		UPLINK RLC PDU	SDU 2, SN=1
6	→		...	SS continues to receive RLC PDUs
7	→		UPLINK RLC PDU	SN = $W/2-1$, Poll
7a	→		UPLINK RLC PDU	SN = $W/2$, Poll
7b	→		UPLINK RLC PDU	SN = $W/2 + 1$, Poll
8	←		DOWNLINK RLC PDU	SDU $W/2 + 3$
9	→		UPLINK RLC PDU	SN = $W/2 + 2$, Poll
9a				SS waits 10 s to secure until no more new PDUs are received
10	←		STATUS PDU	ACK SN 0 to 4$W/2$ (UE sets VT(A) to $W/2+1$)
11	←		DOWNLINK RLC PDU	SDU $W/2 + 4$
12	←		DOWNLINK RLC PDU	SDU $W/2 + 5$
13	→		UPLINK RLC PDU	SN = $W/2+3$
14	→		UPLINK RLC PDU	SN = $W/2+4$, Poll
15			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.20.5 Test requirements

The SS shall receive RLC PDUs with the P bit set in PDUs with sequence numbers of 3, 4, [5](#), [6](#) and 8. No other PDUs should have their P bits set.

CR-Form-v4	
CHANGE REQUEST	
⌘ 34.123-1 CR 237 ⌘ ev - ⌘ Current version: 4.2.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to RLC conformance test 7.2.3.23	
Source: ⌘ Ericsson	
Work item code: ⌘ TEI	Date: ⌘ 26 th March 2002
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-4 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)

Reason for change: ⌘ Test case incorrectly specified. And too many polls expected. Out of date conformance requirements.	
Summary of change: ⌘ Updated conformance requirements Respecified test with minimal changes necessary.	
Consequences if not approved: ⌘ Test case incorrectly specified.	

Clauses affected: ⌘ 7.2.3.23	
Other specs affected: ⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	
Other comments: ⌘ Effects R99 and Rel-4	

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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.

7.2.3.23 Polling for status / Operation of Timer_Poll timer / Restart of the Timer_Poll timer

7.2.3.23.1 Definition

This case tests that the UE will restart the Timer_Poll timer if another poll request is transmitted whilst the timer is running. Incorrect operation of polling will cause degradation of service, or possible service failure.

This test applies to all UE.

7.2.3.23.2 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.

a) Timer_Poll.

...

If a new poll is sent when the timer is active, the timer shall be restarted at the time specified above, and the value of VT(S) shall be saved.

~~If a new poll is sent when the timer is running it is restarted, with a new value of VT(S) 1.~~

Reference

TS 25.322 clause 9.5.

7.2.3.23.3 Test purpose

1. To verify that if a new poll is sent when the timer is running it is restarted.

7.2.3.23.4 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	
Last transmission PDU poll	FALSE
Timer_poll	200
<u>Poll_Window</u>	<u>60</u>
Poll_PDU	<u>816</u>
<u>Transmit window size</u>	<u>32</u>

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 timer.

- a) The SS starts transmission of ~~at least~~ $2 * \text{Poll_PDU} + \text{ceil}(T / \text{TTI})$ numbers of SDUs of size AM_7_PayloadSize - 1 bytes.

- b) Whilst transmitting, the SS receives PDUs from the UE, ~~and notes the time onuntil receiving it receives~~ the ~~third second~~ PDU with the P bit set. ~~(Note: poll due to Poll Window). This time will be recorded as T₁.~~
- c) The SS sends a STATUS PDU acknowledging all the PDUs received so far.
- d) The SS continues to receive consecutive PDUs with the poll bit set until a PDU is received without the poll bit set. The time the last PDU with the poll bit set was received is recorded as T₁.
- ~~d~~e) The SS continues to receive PDUs from the UE and notes the time on reception of the next ~~or fourth~~ PDU with the P bit set. This time will be recorded as T₂.
- ~~e~~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	2* Poll_PDU + ceil(T / TTI) numbers of SDUs are sent.
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		→	UPLINK RLC PDU <u>Void</u>	SS continues to receive RLC PDUs
9		→	UPLINK RLC PDU <u>Void</u>	SN = poll_PDU - 1 + ceil(T / TTI), 2nd Poll, Timer_Poll expired and again started
10		→	UPLINK RLC PDU	SS continues to receive RLC PDUs
11		→	UPLINK RLC PDU	SN = $2 * \text{Poll_PDU} + \text{ceil}(\text{Tx_Window_Size} * 60\%) - 1$, 3 rd - 2 nd Poll, Timer_Poll restarted: Note T1
12		←	STATUS PDU	ACK SN 0 to SN = $\text{ceil}(\text{Tx_Window_Size} * 60\%) - 1 + 2 * \text{Poll_PDU} - 1$
13		→	UPLINK RLC PDU	SN = $\text{ceil}(\text{Tx_Window_Size} * 60\%)$, Poll, Timer_Poll restarted: Note T1 $2 * \text{Poll_PDU}$
14		→	...	SS continues to receive RLC PDUs. <u>If poll bit is set in consecutive PDUs then note new value of T1 until a PDU without a poll bit set is received.</u>
15		→	UPLINK RLC PDU	SN = $\text{ceil}(\text{Tx_Window_Size} * 60\%) + 2 * \text{Poll_PDU} + \text{ceil}(T / \text{TTI}) - 1$, 4 th - 3 rd Poll, Timer_Poll expired: Note T ₂
16			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.23.5 Test requirements

The measured time T₂ - T₁ ~~should~~ shall be 200 ms.

CHANGE REQUEST

⌘ **34.123-1 CR 238** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.24		
Source:	⌘ Ericsson and Rohde & Schwarz		
Work item code:	⌘ TEI	Date:	⌘ 26 th March 2002
Category:	⌘ F	Release:	⌘ Rel-4
	<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)

Reason for change:	⌘ It's not possible to predict when Timer Poll Periodic based polling will occur relative to other polling, because Timer_Poll_Periodic polls occur asynchronously to when the first uplink PDU is transmitted. (Note: Timer Poll Periodic is started when the RLC entity is created and expires periodically thereafter). Poor initial conditions do not allow test to execute as expected. Update conformance requirements.
Summary of change:	⌘ Removed Timer_Poll_Periodic from this test. Increased receive window size to allow transmission of enough PDUs downlink. Reduced Poll_PDU from 8 to 4 so that uplink PDU in step 11 falls within UE transmit window. Updated conformance requirements. R&S: Add a copy of step 8 after step 12. Changed 'should' to 'shall' in Test Requirements. Clarified item 2 in Test Requirements.
Consequences if not approved:	⌘ Test will not work as expected.

Clauses affected:	⌘ 7.2.3.24		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Effects R99 and Rel-4		

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.

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".

~~This timer is only used when the poll-prohibit function is used. It is used to prohibit transmission of polls within a certain period. The timer shall be started when the successful or unsuccessful transmission of a PDU containing a poll is indicated by lower layer (in UE) or a PDU containing a poll is submitted to lower layer (in UTRAN). The prohibit time is calculated from the time a PDU containing a poll is submitted to lower layer until the timer has expired. A poll shall be delayed until the prohibit time expires if a poll is triggered during the prohibit time. Only one poll shall be transmitted when the prohibit time expires even if several polls were triggered during the prohibit time. This timer will not be stopped by a received STATUS PDU.~~

~~The Polling bit shall be set to 1 if any of conditions in 3GPP TS 25.322 clause 11.3.2.1.1 are fulfilled except when the poll-prohibit function is used and the timer Timer_Poll_Prohibit is active.~~

Reference

TS 25.322 clauses 9.5 and 11.3.2.1.1, 9.7.1

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	84
Poll_Window	50
Timer_poll_periodic	400
Transmission window size	32
Downlink RLC	
Receiving window size	32 128

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 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*Poll_PDU)+ ceil(T/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 = Poll_PDU - 1, Poll: Note T ₁
8	→		...	SS continues to receive RLC PDUs
9	→		UPLINK RLC PDU Void	SN = ceil(Timer_poll_periodic/TTI) - 1, No Poll
10	→		UPLINK RLC PDU	SN = (Transmission Window Size / 2) - 1, No Poll
11	→		...	SS continues to receive RLC PDUs
12	→		UPLINK RLC PDU	SN = Poll_PDU + ceil(T/TTI) - 1, Poll: Note T ₂
12a	→		...	SS continues to receive RLC PDUs
13			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.24.5 Test requirements

1. The measured time $T_2 - T_1$ ~~should~~ shall be [Timer_poll_prohibit](#) ms.
2. Only one poll shall be received from the UE [after step 7, the poll](#) in step 12.
3. After step 12 no further poll shall be received from the UE for the next [Timer_poll_prohibit](#) ~~500~~-ms.

CR-Form-v4

CHANGE REQUEST

⌘ **34.123-1 CR 239** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.15		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘ TEI	Date:	⌘ 28 th March 2002
Category:	⌘ F	Release:	⌘ REL-4
	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)

Reason for change:	⌘ 1. Correction of typing mistake
Summary of change:	⌘ 1. Replaced "the poll prohibit timer is function" by "the poll prohibit timer function"
Consequences if not approved:	⌘ Incorrect test specification

Clauses affected:	⌘ 7.2.3.15	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘
	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
Other comments:	⌘ Affects both R99 and REL-4 specifications	

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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.

7.2.3.15 Polling for status / Last PDU in transmission queue

7.2.3.15.1 Definition

This case tests that the UE will poll for a status request on the last PDU in its transmission queue when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.15.2 Conformance requirement

The Polling bit shall be set to 1 if any of following conditions are fulfilled except when the poll prohibit function is used and the timer Timer_Poll_Prohibit is active:

1. Last PDU in buffer is used and the last PDU available for transmission is transmitted.

Reference

TS 25.322 clause 11.3.2.1.1.

7.2.3.15.3 Test purpose

1. To verify that a poll is performed when only one PDU is available for transmission, and the poll prohibit timer ~~is~~ function is not used.
2. To verify that a poll is performed when only one PDU is available for transmission, and the poll prohibit timer ~~is~~ function is used, but inactive.

7.2.3.15.4 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	First run	Second run
Timer_poll_prohibit	disabled	200
Last transmission PDU poll	TRUE	TRUE
Last retransmission PDU poll	FALSE	FALSE

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 $(2 * AM_7_PayloadSize) - 1$ bytes.

Test procedure

- a) The SS transmits an RLC SDU of length $(4 * AM_7_PayloadSize) - 1$ bytes to the UE.
- b) The SS checks the uplink RLC PDUs for a poll for status flag.
- c) The SS may optionally release the radio bearer.

The test is repeated using the RLC parameters given in the Second run column of the configuration table for the initial conditions.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			RB ESTABLISHMENT	See generic procedures
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 1
4		←	DOWNLINK RLC PDU	SDU 1
5		←	DOWNLINK RLC PDU	SDU 1 + Poll
6		→	STATUS PDU	
7		→	UPLINK RLC PDU	SDU 1
8		→	UPLINK RLC PDU	SDU 1 + Poll
9		←	STATUS PDU	
10			RB RELEASE	Optional step

7.2.3.15.5 Test requirements

The Poll bit shall be set in the AMD PDU header of the PDU returned in step 8.

CHANGE REQUEST

⌘ **34.123-1 CR 240** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.18		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘ TEI	Date:	⌘ 28 th March 2002
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-4 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)

Reason for change:	⌘ 1. Correction of typing mistake 2. Correction to incorrect txWindow Size
Summary of change:	⌘ 1. Replaced "contains the last segment that SDU" by "contains the last segment of that SDU" 2. When the test is repeated with parameter Poll SDU set to 64, the txWindow Size should be set to 256 (see mails exchanged between P. Ghandi and L. Mattison on the T1/SIG e-mail reflector in Dec. 2001)
Consequences if not approved:	⌘ Misleading text; the test purpose cannot be reached

Clauses affected:	⌘ 7.2.3.18
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Affects both R99 and REL-4 specifications

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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.

7.2.3.18 Polling for status / Poll every Poll_SDU SDUs

7.2.3.18.1 Definition

This case tests that the UE will poll for a status request every Poll_SDU SDUs when that mode is enabled. Incorrect operation of polling will cause degradation of service, or at worst service failure.

7.2.3.18.2 Conformance requirement

The state variable VT(SDU) is used when the poll every Poll_SDU SDU function is used. It is incremented with 1 for each SDU that is transmitted. When it reaches Poll_SDU a new poll is transmitted and the state variable is set to zero. The poll bit should be set in the PDU that contains the last segment of the SDU. The initial value of this variable is 0.

The Polling bit shall be set to 1 if ... Every Poll_SDU is used and VT(SDU)=Poll_SDU and the PDU contains the last segment of that SDU.

Reference

TS 25.322 clauses 9.4, 9.6 and 11.3.2.1.1.

7.2.3.18.3 Test purpose

1. To verify that a poll is performed when VT(SDU) reaches Poll_SDU.
2. To verify that the poll is sent in the last PDU of the SDU.

7.2.3.18.4 Method of test

Initial conditions

The generic procedure for Radio Bearer establishment (clause 7.1.3 of TS34.108) 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 Last transmission PDU poll Poll_SDU	FALSE 1
--	------------

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 $(4 * AM_7_PayloadSize) - 1$ bytes.

Let the value of Poll_SDU be P.

- a) The SS sends $2 * P$ RLC SDUs of size $AM_7_PayloadSize - 1$ bytes to the UE in PDUs with sequence numbers that are contiguous, starting from zero.
- b) The SS checks the sequence numbers and polling bits of the RLC SDUs returned on the uplink.
- c) The SS terminates the connection.

The test is repeated with Poll_SDU set to 64 [and the txWindow Size set to 256](#).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		DOWNLINK RLC PDU	SDU 1
2	←		DOWNLINK RLC PDU	SDU 2
3	←		...	SS continues to transmit RLC SDUs
4	←		DOWNLINK RLC PDU	SDU 2P
5	→		UPLINK RLC PDU	SDU 1 Expanded to (4 * AM_7_PayloadSize) - 1 bytes by test function
6	→		UPLINK RLC PDU	
7	→		...	SS continues to receive RLC SDUs
8	→		UPLINK RLC PDU	SDU P, Poll
9	←		STATUS PDU	
10	→		UPLINK RLC PDU	SDU P+1 Expanded to (4 * AM_7_PayloadSize) - 1 bytes by test function
11	→		UPLINK RLC PDU	
12	→		...	SS continues to receive RLC SDUs
13	→		UPLINK RLC PDU	SDU 2P, Poll
14			RB RELEASE	Optional step

The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.18.5 Test requirements

The UE shall return uplink PDUs that contain polls for status in sequence numbers $4 * P - 1$ and $8 * P - 1$. No other PDUs should poll for status.

CR-Form-v4	
CHANGE REQUEST	
⌘ 34.123-1 CR 244 ⌘ ev - ⌘ Current version: 4.2.0 ⌘	

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to RLC conformance test 7.2.3.33	
Source: ⌘ Ericsson	
Work item code: ⌘ TEI	Date: ⌘ 26 th March 2002
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-4 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)

Reason for change: ⌘ There are too many uplink PDUs retransmitted before a RESET PDU in steps 13-14 and 27-28, according to RLC core spec. Out of date conformance requirements	
Summary of change: ⌘ Clarified that Max Dat=4. Removed uplink PDUs retransmitted in steps 13-14 and 27-28. Updated conformance requirements	
Consequences if not approved: ⌘ Test not specified according to core spec.	

Clauses affected: ⌘ 7.2.3.33	
Other specs affected: ⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	
Other comments: ⌘ Effects R99 and Rel-4	

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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.

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7.2.3.33 Operation of the RLC Reset procedure / UE Originated

7.2.3.33.1 Definition

This case tests that when ~~an unrecoverable~~ protocol error ~~occurs~~ is detected the UE will initiate and perform the RLC Reset procedure. Incorrect operation of this procedure may cause loss of service.

7.2.3.33.2 Conformance requirement

The Sender shall:

- if one of the following triggers is detected:

1) "No Discard after MaxDAT number of retransmissions" is configured and VT(DAT) equals the value MaxDAT (see TS 25.322 subclause 9.7.3.4);

...

- stop transmitting any AMD PDU or STATUS PDU;

- submit a RESET PDU to the lower layer;

- start the timer Timer_RST and increase VT(RST) with 1.

NOTE: If the TFC selection exchange has been initiated by sending the RLC Entity Info parameter to MAC, the RLC entity may delay the RLC reset procedure until the end of the next TTI.

When a reset procedure has been initiated it can only be ended upon reception of a RESET ACK PDU with the same RSN value as in the corresponding RESET PDU, or upon request of re-establishment or release from upper layer, a reset procedure is not interrupted by the reception of a RESET PDU from the peer entity.

The Sender shall:

- set the HFNI field to the currently highest used HFN (DL HFN when the RESET PDU is sent by UTRAN or UL HFN when the RESET PDU is sent by the UE);

- set the RSN field to the sequence number of the RESET PDU. The sequence number of the first RESET PDU after the AM entity is established or re-established shall be "0". This sequence number is incremented every time a new RESET PDU is transmitted, but not when a RESET PDU is retransmitted.

Upon reception of a RESET ACK PDU, the Sender shall:

- if the Sender has already transmitted a RESET PDU which has not been yet acknowledged by a RESET ACK PDU:

- if the received RSN value is the same as the one in the corresponding RESET PDU:

- set the HFN value (DL HFN when the RESET ACK PDU is received in UE or UL HFN when the RESET ACK PDU is received in UTRAN) to the HFNI field of the received RESET ACK PDU;

- reset the state variables described in subclause 9.4 to their initial values;

- stop all the timers described in subclause 9.5;

- reset configurable parameters to their configured values;

- discard all RLC PDUs in the receiving side of the AM RLC entity;

- discard all RLC SDUs that were transmitted before the reset in the transmitting side of the AM RLC entity;

- increase with one the UL HFN and DL HFN, and the updated HFN values shall be used for the first transmitted and received AMD PDUs after the reset procedure;

- otherwise (if the received RSN value is not the same as the one in the corresponding RESET PDU):
 - discard the RESET ACK PDU;
- otherwise (if the Sender has not transmitted a RESET PDU which has not been yet acknowledged by a RESET ACK PDU):
 - discard the RESET ACK PDU.

NOTE: If the TFC selection exchange has been initiated by sending the RLC Entity Info parameter to MAC, the RLC entity may delay the RLC SDUs discard in the transmitting side until the end of the next TTI.

If Timer_RST expires before the reset procedure is terminated, the Sender shall:

- if $VT(RST) < MaxRST - 1$:
 - set the RESET PDU as previously transmitted (even if additional SDUs were discarded in the mean-time);
 - transmit RESET PDU;
- increment $VT(RST)$ by one;
- restart Timer_RST.

~~The procedure shall be initiated when a protocol error occurs.~~

~~The sender sends the RESET PDU when it is in data transfer ready state and enters reset pending state. The sender shall start the timer Timer_RST and increase $VT(RST)$ with 1.~~

~~The RSN field shall indicate the sequence number of the RESET PDU. This sequence number is incremented every time a new RESET PDU is transmitted, but not when a RESET PDU is retransmitted.~~

~~Upon reception of a RESET PDU the receiver shall respond with a RESET ACK PDU. The receiver resets the state variables to their initial value and resets configurable parameters to their configured value. Both the transmitter and receiver side of the AM RLC entity are reset. All RLC PDUs in the AM RLC receiver shall be discarded. The RLC SDUs in the AM RLC transmitter that were transmitted before the reset shall be discarded.~~

~~When a RESET PDU is received, the receiver shall set the HFN (DL HFN when the RESET is received in UE or UL HFN when the RESET is received in UTRAN) equal to the HFNI field in the received RESET PDU.~~

~~Upon reception of a RESET ACK the Timer_RST shall be stopped. The sender resets the state variables to their initial value and resets configurable parameters to their configured value. The sender shall enter data transfer ready state.~~

~~Upon expiry of Timer_RST the sender shall retransmit the RESET PDU and increase $VT(RST)$ with 1.~~

~~If $VT(RST)$ becomes larger or equal to $MaxRST$ the RRC layer shall be informed.~~

Reference

TS 25.322 clause 11.4.

7.2.3.33.3 Test purpose

1. To verify that the Reset procedure is initiated when a protocol error occurs.
2. To verify that the sender resets state variables to their initial value and resets configurable parameters to their configured value.
3. To verify that RSN is updated correctly.
4. To verify operation of Timer_RST.

7.2.3.33.4 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 Transmission RLC discard No discard <u>Max DAT</u>	<u>4</u>
--	----------

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 $(2 * AM_7_PayloadSize) - 1$ bytes.

Test procedure

- a) The SS sends 2 RLC SDUs of size $(2 * AM_7_PayloadSize) - 1$ bytes.
- b) The SS checks the RLC PDUs received on the uplink and responds to all poll requests with a STATUS PDU negatively acknowledging the RLC PDU with sequence number 0, and positively acknowledging all other RLC PDUs received.
- c) The SS notes the time that the RESET PDU is received. This time will be recorded as T_1 . The SS notes the value of the RSN bit.
- d) The SS makes no response, and notes the time that the next RESET PDU is received. This time will be recorded as T_2 . The SS notes the value of the RSN bit.
- e) The SS sends a RESET ACK PDU with the RSN bit set to the same value as received in the RESET PDU received in step d).
- f) The SS sends an RLC SDU of size $(2 * AM_7_PayloadSize) - 1$ bytes.
- g) The SS checks the RLC PDUs received on the uplink and responds to all poll requests with a STATUS PDU negatively acknowledging the RLC PDU with sequence number 0, and positively acknowledging all other RLC PDUs received.
- h) The SS notes the value of the RSN bit of the RESET PDU received.
- i) The SS sends a RESET ACK PDU with the RSN bit set to the value received in the RESET PDU in step c) (the incorrect value).
- j) The SS waits to receive another RESET PDU and checks the RSN bit.
- k) The SS sends a RESET ACK PDU with the correct RSN bit.
- l) The SS checks any RLC SDU received on the uplink.
- m) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 2
4		←	DOWNLINK RLC PDU	SDU 2
5		→	UPLINK RLC PDU	SDU 1
6		→	...	SS continues to receive RLC PDUs
7		→	UPLINK RLC PDU	SDU 2, Poll
8		←	STATUS PDU	NAK SN=0
9		→	UPLINK RLC PDU	Retransmit SN=0, Poll
10		←	STATUS PDU	NAK SN=0
11		→	UPLINK RLC PDU	Retransmit SN=0, Poll
12		←	STATUS PDU	NAK SN=0
13		→	UPLINK RLC PDU Void	Retransmit SN=0, Poll
14		←	STATUS PDU Void	NAK SN=0
15		→	RESET PDU	Note T ₁
16		→	RESET PDU	Note T ₂ , check RSN
17		←	RESET ACK PDU	
18		←	DOWNLINK RLC PDU	SDU 3
19		←	DOWNLINK RLC PDU	SDU 3
20		→	UPLINK RLC PDU	SDU 3, SN=0
21		→	UPLINK RLC PDU	SDU 3, Poll
22		←	STATUS PDU	NAK SN=0
23		→	UPLINK RLC PDU	Retransmit SN=0, Poll
24		←	STATUS PDU	NAK SN=0
25		→	UPLINK RLC PDU	Retransmit SN=0, Poll
26		←	STATUS PDU	NAK SN=0
27		→	UPLINK RLC PDU Void	Retransmit SN=0, Poll
28		←	STATUS PDU Void	NAK SN=0
29		→	RESET PDU	Check RSN
30		←	RESET ACK PDU	RSN = 0
31		→	RESET PDU	Check RSN
32		←	RESET ACK PDU	RSN = 1
33			RB RELEASE	Optional step

NOTE: The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.33.5 Test requirements

1. The measured time $T_2 - T_1$ should be 500 ms.
2. In steps 20 to 21 the SS shall receive an RLC SDU with contents that match the third RLC SDU sent to the UE. The first RLC PDU containing that SDU shall have sequence number 0.
3. The RSN bit of the first and second RESET PDUs received should be set to 0. The RSN bit of the third and fourth RESET PDU should be set to 1.

CHANGE REQUEST

⌘ **34.123-1 CR 251** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.1.2		
Source:	⌘ Motorola and Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-04-05
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-4 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)

Reason for change:	⌘ 1. Clarification of RLC segmentation 2. Clarification of the expected sequence for repeated iterations 3. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated). 4. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response.
Summary of change:	⌘ 1. Correction of segmentation unit (including RLC header) 2. Correction of the note related to the expected sequence 3. The test procedure was corrected such that transmissions with the correct TCTF field are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure. 4. Setting of Missing PDU indicator has been Removed. 5. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence. 6. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3 7. As the Authentication Response message is not used any longer the transmission and receiver window size can be changed from 128 to the default size.
Consequences if not approved:	⌘ Test does not work properly

Clauses affected:	⌘	7.1.1.2
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘	Effects R99 and REL-4

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.

7.1.1.2 DTCH or DCCH mapped to RACH/FACH / Invalid TCTF

7.1.1.2.1 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.

7.1.1.2.2 Conformance requirement

DTCH or DCCH mapped to RACH/FACH:

TCTF field, C/T field, UE-Id type field and UE-Id are included in the MAC header.

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

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 c).

7.1.1.2.3 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, C/T field, UE-Id type and UE-Id field are correctly applied when a DTCH or DCCH is mapped to the RACH/FACH.

7.1.1.2.4 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 (Interactive/Background 32 kbps RAB + SRB for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH) with the following exceptions for the FACH:

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	Test	
RLC	Logical channel type	DCCH	
	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.	

and using the configuration in TS 34.108 clause 6.10.2.4.3.3 for the PCH.

The TFCS should be configured as specified in clause 6.10.2.4.3.3.1.4.

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 (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.

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-2 (CS-CELL_FACH_INITIAL) with the following exception:

~~1. The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling has Missing PDU Indicator enabled.~~

~~2. The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling, has Transmission window size set to 128, and has Receive window size set to 128.~~

Test procedure

a) The SS receives the PAGING RESPONSE message from the UE and checks the TCTF field.

~~b)~~ ~~b)~~ The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing

1. ~~an AUTHENTICATION REQUEST message~~ ~~Dummy Octet S~~string for NAS Message, of ~~S~~size sufficient enough to ~~F~~fit in one RLC PDU of 144 bits, including the correct RLC AM header.

- 2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this ~~D~~domain exists)
- 3. The polling bit in RLC header is set for ~~T~~transmission of RLC STATUS PDU.

~~The DIRECT TRANSFER message shall be segmented into 128-144 bit PDUs, with including the correct RLC AM headers.~~

The MAC header shall be set as follows:

Field	Value
TCTF	00'B
UE ID Type	C-RNTI
UE ID	As set in RRC CONNECTION SETUP message.
C/T	Logical Channel ID for SRB #3 (AM-DCCH NAS High Priority)

Where a TCTF size of 8-bits is used, 6-bits from the RLC payload shall be discarded.

c) The SS monitors the RACH for 10 s to ensure that no RACH access occurs.

~~e~~d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct TCTF of 11'B. The sequence numbers in the RLC headers shall be ~~incremented normally~~identical with ~~from~~ those sent in b).

~~d~~e) SS Receives RLC Status PDU on SRB #3 acknowledging the ~~r~~Receipt of the above RLC PDU

~~f~~f) ~~The SS receives an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the RACH due to detection of missing PDUs~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2.

~~e~~g) The SS repeats steps b), c), ~~d~~e) and ~~d~~f), with the TCTF field set as follows in step b):

Iteration	TCTF Value
2	01000000'B
3	01000001'B
4	10000000'B
5	10000001'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check TCTF
2		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with incorrect TCTF = 00'B, 0100 0000'B, 0100 0001'B, 1000 0000'B, or 1000 0001'B,
2a			wait for T = 10 s	SS monitors for RACH access attempts
3		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 1)))	Sent with correct TCTF = 11'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT 2)))	Sent with correct TCTF = 11'B
		←	MAC PDU(TCTF, UE-ID, C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER(AUTHENTICATION REQUEST SEGMENT n)))	Sent with correct TCTF = 11'B
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n and TCTF Field is recognised as correct for the DCCH.
5	→		AUTHENTICATION RESPONSE RRC Status PDU	TCTF Field is recognised as correct for the DCCH

Steps 2 – 5 of above expected sequence ~~is~~ are repeated for iterations 2 to 5. Note: For iteration k the SN in steps 2 and 4 starts with x + (k-1).

Specific Message Contents

None

7.1.1.2.5 Test Requirement

In step a) the TCTF field should have the value 00'B. Note that this may be implied from receipt of the PAGING RESPONSE message correctly by the SS test script.

~~On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with TCTF=11'B is received in step e), negatively acknowledging the PDUs transmitted in step b) as missing. During the test the SS shall request an RLC status report with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs.~~

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive an ~~AUTHENTICATION RESPONSE message where the TCTF field should have value 01'B.~~ RRC Status PDU on SRB # 2, and RLC Status PDU on SRB # 3 with TCTF field set to value '01' B.

CHANGE REQUEST

⌘ **34.123-1 CR 252** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title: ⌘ Correction to MAC conformance test 7.1.1.8

Source: ⌘ Motorola and Ericsson

Work item code: ⌘ TEI

Date: ⌘ 2002-05-24

Category: ⌘ **F**

Use one of the following categories:

- F** (correction)
- A** (corresponds to a correction in an earlier release)
- B** (addition of feature),
- C** (functional modification of feature)
- D** (editorial modification)

Detailed explanations of the above categories can be found in 3GPP [TR 21.900](#).

Release: ⌘ REL-4

Use one of the following releases:

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

Reason for change: ⌘

1. SN in the expected sequence is incorrect
2. Missing statement at end of expected sequence on second iteration
3. Test procedure does not work for terminals which do not deliver out-of-sequence RLC SDUs (support of out-of-sequence delivery is not mandated)
4. Ambiguous as to which PDU is 128 bit in test procedure b)
5. Simplification of Test method, so as to invoke RRC error handling procedure in place of expecting a NAS Response

Summary of change: ⌘

1. SN in expected sequence corrected
2. Statement to include repeat of steps 2 to 5 added
3. The test procedure was corrected such that transmissions with the correct C/T field are received in-sequence and will be delivered to higher layer by RLC. Transmission of a STATUS PDU due to detection of a missing PDU is removed from the expected sequence. Its occurrence now would indicate a failure of the test procedure.
4. Clarified segmentation into RLC PDUs in test procedure b)
5. Setting of Missing PDU indicator has been Removed, as it is not required now.
6. Transmission of RLC Status PDU Acknowledging, the reception of RLC PDU is added in the expected sequence.
7. The Transmission of Authentication Response in the expected sequence has been replaced by RRC Status PDU on SRB #3
8. As the Authentication Response message is not used any longer the transmission and receiver window size can be changed from 128 to the default size.

Consequences if ⌘ Test does not work properly

not approved:

Clauses affected:	⌘	7.1.1.8		
Other specs affected:	⌘	<input type="checkbox"/> Other core specifications	⌘	
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
Other comments:	⌘	Effects R99 and REL-4		

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.

7.1.1.8 DTCH or DCCH mapped to DCH / Invalid C/T Field

7.1.1.8.1 Definition

This tests that the MAC applies the correct header to the MAC PDU according to the type of logical channel carried on the DCH transport channel. Incorrect application of MAC headers would result in inoperation of the UE.

7.1.1.8.2 Conformance requirement

DTCH or DCCH mapped to DCH, no multiplexing of dedicated channels on MAC: -no MAC header is required.

DTCH or DCCH mapped to DCH, with multiplexing of dedicated channels on MAC: -C/T field is included in MAC header.

The following fields are defined for the MAC header:

- C/T field
The C/T field provides identification of the logical channel instance when multiple logical channels are carried on the same transport channel...

Structure of the C/T field

C/T field	Designation
0000	Logical channel 1
0001	Logical channel 2
...	...
1110	Logical channel 15
1111	Reserved (PDUs with this coding will be discarded by this version of the protocol)

Reference(s)

TS 25.321 clauses 9.2.1 and 9.2.1.1 b).

7.1.1.8.3 Test purpose

1. To verify that the UE discards PDUs with reserved or incorrect values in C/T field.
2. To verify that the C/T field is correctly applied when a DTCH or DCCH is mapped to a DCH.

7.1.1.8.4 Method of test

Initial conditions

System Simulator:

- 1 cell, default parameters, Ciphering Off.

The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2: Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH) with the following exception:

Higher layer	RAB/signalling RB	RB#3 (SRB#3)	
	User of Radio Bearer	NAS_DT High prio	
RLC	Logical channel type	DCCH	
	RLC mode	TM	
	Payload sizes, bit	148	
	Max data rate, bps	3700	
	RLC header, bit	0	
MAC	MAC header, bit	0 (note)	
	MAC multiplexing	Simulated by SS	
Layer 1	TrCH type	DCH	
	TB sizes, bit	148	
	TFS	TF0, bits	0 x 148
		TF1, bits	1 x 148
	TTI, ms	40	
	Coding type	CC 1/3	
	CRC, bit	16	
	Max number of bits/TTI before rate matching	516	
	Uplink; Max number of bits/radio frame before rate matching	129	
	RM attribute	155-165	
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.			

The TFCS should be configured as specified in clause 6.10.2.4.1.2.1.1.2.

User Equipment:

The UE shall operate under normal test conditions, Cipherring 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 (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.

The SS follows the procedure in TS 34.108 clause 7.4.2.1 (Mobile Terminated) so that the UE shall be in state BGP 6-1 (CS-CELL_DCH_INITIAL). During this procedure the RRC CONNECTION SETUP message shall allocate a DCH to carry the signalling radio bearers as follows:

1. The DCH/DPCH is configured as specified in TS 34.108 clause 6.10.2.4.1.2: Stand-alone UL:3.4 DL:3.4 kbps SRBs for DCCH) with the following exception:

~~1.1 The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling has Missing PDU Indicator enabled.~~

1.2 The RLC entity for RB#3 (SRB#3), AM DCCH for high priority NAS signalling, has Transmission window size set to 128, and has Receive window size set to 128.

Test procedure

- a) The SS receives the PAGING RESPONSE message from the UE and checks the C/T field.
- b) The SS transmits MAC PDUs containing RLC AM PDUs containing a DIRECT TRANSFER message containing ~~an AUTHENTICATION REQUEST message.~~

The ~~DIRECT TRANSFER~~ message shall be segmented into ~~128~~144 bit PDUs, with including the correct RLC AM headers.

1. Dummy octet string for NAS Message, of size sufficient enough to fit in one RLC PDU of 144 bits, including the correct RLC AM header.
2. The IE CN Domain Identity is Set to PS Domain (no signalling connection for this ~~D~~omain exists)
3. The polling bit in RLC header is set for ~~T~~ransmission of RLC STATUS PDU.

The MAC header shall be set as follows:

Field	Value
C/T	0100'B

- c) The SS monitors the DCH (DCCH/SRB#3) for 10 s to ensure that no transmissions occur.
- ~~e~~d) The SS again transmits MAC PDUs as in b) above, but this time uses the correct C/T value for AM-DCCH NAS High Priority of 0010'B. The sequence numbers in the RLC headers shall be ~~incremented normally identical with from~~ those sent in b).
- ~~d~~e) SS Receives RLC Status PDU on SRB #3 a~~A~~cknowledging the r~~R~~eceipt of the above RLC PDU
- ~~f~~) The SS receives ~~an AUTHENTICATION RESPONSE message STATUS PDU on SRB #3 AM RLC on the DCH due to detection of missing PDUs.~~ a RRC STATUS message on the uplink DCCH using AM RLC on SRB # 2
- ~~e~~g) The SS repeats steps b), c), d), e) and ~~d~~f), with the C/T field set as follows in step b):

Iteration	C/T Value
2	1111'B

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	→		PAGING RESPONSE	Check C/T field
2		←	MAC PDU(C/T, RLC AM PDU(SN=x, DIRECT TRANSFER))(AUTHENTICATION REQUEST) SEGMENT 1))	Sent with incorrect C/T = 0100'B, or 1111'B
		←	MAC PDU(C/T, RLC AM PDU(SN=x+1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT 2))	Sent with incorrect C/T = 0100'B, or 1111'B
		←	...	
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT n))	Sent with incorrect C/T = 0100'B, or 1111'B
2a			wait for T = 10 s	SS monitors for DCH (SRB#3) transmissions
3		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+1, DIRECT TRANSFER))(AUTHENTICATION REQUEST) SEGMENT 1))	Sent with correct C/T = 0010'B
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+2, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT 2))	Sent with correct C/T = 0010'B
		←	...	
		←	MAC PDU(C/T, RLC AM PDU(SN=x+n+n-1, DIRECT TRANSFER)(AUTHENTICATION REQUEST) SEGMENT n))	Sent with correct C/T = 0010'B
4	→		RLC-STATUS-PDU	NACK PDUs with SN = x to x+n C/T Field is recognised as correct for the DCCH
5	→		AUTHENTICATION RESPONSE RRC Status PDU	C/T Field is recognised as correct for the DCCH

Steps 2 to 5 of the expected sequence are repeated for iteration 2. Note: For iteration 2 the SN in steps 2 and 4 starts with x+1.

Specific Message Contents

None

7.1.1.8.5 Test Requirement

In step a) the C/T field should be set to the Logical Channel ID for SRB #3 (0010'B). Note that this may be implied ~~from~~from receipt of the PAGING RESPONSE message correctly by the SS test script.

During the test the SS shall request RLC status reports with every transmitted PDU by setting of the Polling Bit. The UE shall not send any STATUS PDUs indicating missing PDUs. On the first iteration, and on each iteration in step d) the UE shall transmit a STATUS PDU on the RLC AM entity associated with SRB #3 each time the first PDU with C/T=0010'B is received in step e), negatively acknowledging the PDUs transmitted in step b) as missing. RLC status reports, and the UE shall not send any STATUS PDUs indicating missing PDUs.

At the end of each iteration (steps 4 and 5 of expected sequence) the SS shall receive a RLC Status PDU on SRB # 3 with C/T field set to '0010'B and RRC Status PDU on SRB # 2. ~~expected sequence the SS shall receive an AUTHENTICATION RESPONSE message~~

CR-Form-v4
CHANGE REQUEST
⌘ 34.123-1 CR 253 ⌘ ev - ⌘ Current version: 4.2.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to RLC conformance test 7.2.3.34		
Source:	⌘ Rohde & Schwarz		
Work item code:	⌘ TEI	Date:	⌘ 28 th March 2002
Category:	⌘ F	Release:	⌘ REL-4
	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)

Reason for change:	⌘ 1. Incorrect Uplink RLC configuration		
Summary of change:	⌘ 1. Parameter <i>MaxDAT</i> parameter is specified		
Consequences if not approved:	⌘ Test purpose cannot be reached		

Clauses affected:	⌘ 7.2.3.34		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ Affects both R99 and REL-4 specifications		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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.

7.2.3.34 Operation of the RLC Reset procedure / UE Terminated

7.2.3.34.1 Definition

This case tests that when an unrecoverable protocol error occurs the UE responds correctly to the RLC Reset procedure initiated by the network. Incorrect operation of this procedure may cause loss of service.

7.2.3.34.2 Conformance requirement

Upon reception of a RESET PDU the receiver shall respond with a RESET ACK PDU. The receiver resets the state variables to their initial value and resets configurable parameters to their configured value. Both the transmitter and receiver side of the AM RLC entity are reset. All RLC PDUs in the AM RLC receiver shall be discarded. The RLC SDUs in the AM RLC transmitter that were transmitted before the reset shall be discarded.

Reference

TS 25.322 clause 11.4.3.

7.2.3.34.3 Test purpose

1. To verify that upon reception of a RESET PDU the receiver responds with a RESET ACK PDU.
2. To verify that the receiver resets its state variables to their initial value and resets configurable parameters to their configured value.

7.2.3.34.4 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 Transmission RLC discard No discard <u>MaxDAT</u>	<u>4</u>
---	----------

These settings apply to both the uplink and downlink DTCH.

Test procedure

- a) The SS sends 2 RLC SDUs of size $(2 * AM_7_PayloadSize) - 1$ bytes, and polls on the last PDU sent.
- b) The SS checks the STATUS PDUs received on the uplink until both SDUs have been acknowledged.
- c) The SS transmits a RESET PDU.
- d) The SS monitors the uplink for a RESET ACK PDU.
- e) The SS sends an RLC SDU of size $(2 * AM_7_PayloadSize) - 1$ bytes, and polls on the last PDU sent.
- f) The SS checks for STATUS PDUs received on the uplink until the SDU has been acknowledged.
- g) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	DOWNLINK RLC PDU	SDU 1
2		←	DOWNLINK RLC PDU	SDU 1
3		←	DOWNLINK RLC PDU	SDU 2
4		←	DOWNLINK RLC PDU	SDU 2, poll
5		→	STATUS PDU	ACK SN=0, 1, 2 and 3
6		←	RESET PDU	
7		→	RESET ACK PDU	
8		←	DOWNLINK RLC PDU	SDU 3
9		←	DOWNLINK RLC PDU	SDU 3, poll
10		→	STATUS PDU	ACK SN=0 and 1
11			RB RELEASE	Optional step

NOTE: The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.

7.2.3.34.5 Test requirements

1. The SS shall receive a RESET ACK PDU in step 7.
2. The SS shall receive a STATUS PDU in step 10 acknowledging for the third RLC SDU transmitted with PDUs starting at SN=0.

CHANGE REQUEST

⌘ **34.123-1 CR 254** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction to MAC conformance test 7.1.2.3.1		
Source:	⌘ Ericsson, ETSI MCC		
Work item code:	⌘ TEI	Date:	⌘ 2002-05-23
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-4 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)

Reason for change:	⌘ 1. ASC selection for initial access is undefined 2. Incorrect terminology used in expected sequence 3. Parameter Mmax is not defined 4. Parameter setting for waiting time included 5. ASC parameters were chosen such that the random access procedure does not work properly. 6. Determination of timing parameter is feasible.
Summary of change:	⌘ 1. ASC selection specified by mandating the Access Class (AC) that shall be used for the initial access. 2. RRC_CONNECTION_REQUEST replaced by "Access Preamble" 3. Mmax = 1 mandated 4. Waiting time 10 s mandated 5. The parameter "Available subchannel number" has been changed to allow reasonable preamble ramping patterns. 6. Determination of timing parameter added to expected sequence. The note regarding "indeterminate" timing parameter is removed. 7. Added clarification to initial condition that USIM card with "Type B" setting shall be used to obtain the test purpose .
Consequences if not approved:	⌘ The test does not work properly.

Clauses affected:	⌘ 7.1.2.3.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications

How to create CRs using this form:

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

7.1.2.3 Correct Selection of RACH parameters

7.1.2.3.1 Correct Selection of RACH parameters (FDD)

7.1.2.3.1.1 Definition

The physical random access procedure described in this subclause is initiated upon request of a PHY-Data-REQ primitive from the MAC sublayer.

The UE selection of "PRACH system information" is described in TS 25.331 clause 8.5.17

7.1.2.3.1.2 Conformance requirement

A. The physical random-access procedure shall be performed as follows:

- 1 Derive the available uplink access slots, in the next full access slot set, for the set of available RACH sub-channels within the given ASC with the help of TS 25.214, subclauses 6.1.1. and 6.1.2. Randomly select one access slot among the ones previously determined. If there is no access slot available in the selected set, randomly select one uplink access slot corresponding to the set of available RACH sub-channels within the given ASC from the next access slot set. The random function shall be such that each of the allowed selections is chosen with equal probability.
- 2 Randomly select a signature from the set of available signatures within the given ASC. The random function shall be such that each of the allowed selections is chosen with equal probability.
- 3 Set the Preamble Retransmission Counter to Preamble Retrans Max.
- ...
- 5 ... Transmit a preamble using the selected uplink access slot, signature, and preamble transmission power.
- 6 If no positive or negative acquisition indicator ($AI \neq +1$ nor -1) corresponding to the selected signature is detected in the downlink access slot corresponding to the selected uplink access slot:
 - 6.1 Select the next available access slot in the set of available RACH sub-channels within the given ASC.
 - 6.2 Randomly select a new signature from the set of available signatures within the given ASC. The random function shall be such that each of the allowed selections is chosen with equal probability.
 - ...
 - 6.4 Decrease the Preamble Retransmission Counter by one.
 - 6.5 If the Preamble Retransmission Counter > 0 then repeat from step 5. Otherwise pass L1 status ("No ack on AICH") to the higher layers (MAC) and exit the physical random access procedure.
- 7 If a negative acquisition indicator corresponding to the selected signature is detected in the downlink access slot corresponding to the selected uplink access slot, pass L1 status ("Nack on AICH received") to the higher layers (MAC) and exit the physical random access procedure.
- 8 Transmit the random access message three or four uplink access slots after the uplink access slot of the last transmitted preamble depending on the AICH transmission timing parameter. Transmission power of the control part of the random access message should be P_{p-m} [dB] higher than the power of the last transmitted preamble. Transmission power of the data part of the random access message is set according to subclause 5.1.1.2.
- 9 Pass L1 status "RACH message transmitted" to the higher layers and exit the physical random access procedure.

Reference(s)

TS 25.214 clause 6.1.

7.1.2.3.1.3 Test purpose

To verify that:

A1 the UE, initially:

- determines the ASC for the given Access Class (AC).
- derives the available uplink access slots, in the next full access slot set, for the set of available RACH sub-channels within the given ASC with the help of TS 25.214, subclauses 6.1.1. and 6.1.2. and randomly select one access slot among the ones previously determined.
- randomly select a new signature from the set of available signatures within the given ASC.

A2 the UE, when not receiving any reply from UTRAN:

- selects the next available access slot in the set of available RACH sub-channels within the given ASC.
- randomly select a new signature from the set of available signatures within the given ASC.
- does not transmit on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

A3 the UE, when detecting a negative acquisition indicator:

- does not transmit on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

A4 the UE, when detecting a positive acquisition indicator:

- transmits the random access message three or four uplink access slots after the uplink access slot of the last transmitted preamble depending on the AICH transmission timing parameter.
- terminates the random access procedure.

7.1.2.3.1.4 Method of test

Initial conditions

The UE shall be attached to the network and in idle mode.

The UE shall use Access Class AC#15 which provides permission to use ASC#0 for the initial access. This condition is achieved by inserting the USIM card with "Type B" setting of the parameter EF_{ACC} (Access Control Class) as defined in TS 34.108.

Preamble Retrans Max parameter in SIB5 set to 5.

Maximum number of preamble retransmission cycles in SIB 5 is set to Mmax = 1.

2 ASC settings (ASC#0 and ASC#1) are defined (with default parameters) in SIB5, except that the parameter assigned sub channel number is set as follows:

ASC#0 Assigned sub channel number = '0001'B

ASC#1 Assigned sub channel number = '0010'B

The available sub-channel number defined in SIB5 is set to ~~'0000 0000 0011'~~'B'1111 1111 1111'~~B~~. Note: this value allows RACH transmission on all sub-channels-0 (ASC#0) and 1 (ASC#1) only defined by "Assigned sub channel number" above.

Related ICS/IXIT Statement(s)

TBD

Foreseen Final State of the UE

The same as the initial conditions.

Test procedure

- a) The SS pages the UE until it performs a RACH access.
- b) The SS measures the access slot and preamble signature used.
- c) The SS does not acknowledge the RACH access, causing the UE to retry.
- d) The SS again measures the access slot and preamble signature used.
- e) The SS repeats the procedure from step c) until the maximum number of retries N_{RA} "Preamble Retrans Max" have been attempted, and monitors the RACH channel for ~~{TBD}~~ 10 seconds to ensure that no further RACH accesses occur.
- f) The SS pages the UE until it performs a RACH access.
- g) The SS measures the the access slot and preamble signature used.
- h) The SS responds with a negative acquisition indicator on the AICH.
- i) The SS monitors the RACH channel for ~~{TBD}~~ 10 seconds to ensure that no further RACH accesses occur.
- j) The SS pages the UE until it performs a RACH access.
- k) The SS measures the access slot used.
- l) The SS acknowledges the RACH access normally.
- m) The SS measures the first access slot used in the PRACH message part.
- n) The SS monitors the RACH channel for ~~{TBD}~~ 10 seconds to ensure that no further RACH accesses occur.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		PAGE	Preamble Retransmission Counter = 5
2	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = 4-n, where n is defined by the table in clause 7.1.2.3.1.5 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ } Preamble Retransmission Counter = 4
3	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = mod(n+3,15) 4 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ } Preamble Retransmission Counter = 3
4	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = mod(n+6,15) 4 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ } Preamble Retransmission Counter = 2
5	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = mod(n+9,15) 4 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ } Preamble Retransmission Counter = 1
6	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = mod(n+12,15) 4 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ } Preamble Retransmission Counter = 0
7			Wait for T = [TBD]10 s	SS monitors for RACH access attempts
8	←		PAGE	
9	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = 4-n, where n is defined by the table in clause 7.1.2.3.1.5 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ }
10	←		AICH = NEG ACQUISITION IND	
11			Wait for T = [TBD]10 s	SS monitors for RACH access attempts
12	←		PAGE	
13	→		RRC_CONNECTION_REQUEST Access Preamble	Access slot used = n, where n is defined by the table in clause 7.1.2.3.1.5 4 from {0,1,3,4,6,7,9,10,12,13} Signature used = 4-any from {P ₀ .. P ₇ }
14	←		AICH = POS ACQUISITION IND	
15	→		RRC_CONNECTION_REQUEST	Message part. Access slot used = mod(n+3,15)
16			Wait for T = [TBD]10 s	SS monitors for RACH access attempts

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	'0000 0000 0000 0001' B '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

7.1.2.3.1.5 Test requirements

A1

At step 2

- ~~the SS shall receive a PRACH preamble using an access slot from the set of access slots {0,1,3,4,6,7,9,10,12,13} as defined below~~ and using a preamble signature from the set of preamble signatures {P₀ .. P₇}. See TS 25.213, clause 4.3.3.3 for a list of preamble codes.
- the access slot selected for the first access preamble can be any of the shaded table entries given below for ASC#0, depending on SFN (Note: the table entries which are not shaded are not allowed for ASC#0):

SFN modulo 8 of corresponding P-CCPCH frame	Sub-channel number											
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
<u>0</u>	0	1	2	3	4	5	6	7	8	9	10	11
<u>1</u>	12	13	14						8	9	10	11
<u>2</u>				0	1	2	3	4	5	6	7	
<u>3</u>	9	10	11	12	13	14						8
<u>4</u>	6	7					0	1	2	3	4	5
<u>5</u>			8	9	10	11	12	13	14			
<u>6</u>	3	4	5	6	7					0	1	2
<u>7</u>						8	9	10	11	12	13	14

A2

At steps 3, 4, 5, and 6

- ~~the SS shall receive a PRACH preamble using an access slot from the set of access slots {0,1,3,4,6,7,9,10,12,13} mod(n + 3, 15), where n is the access slot used in the previous step,~~ and using a preamble signature from the set of preamble signatures {P₀ .. P₇}. See TS 25.213, clause 4.3.3.3 for a list of preamble codes.

At step 7

- the SS shall not receive on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

A3

At step 11

- the SS shall not receive on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

A4

At step 15

- the SS shall receive the random access message three access slots after the uplink access slot of the preamble received in step 13.

At step 11

- the SS shall not receive on the PRACH resources specified in the BCH message SIB 5 after that the physical random access procedure is terminated.

Note: Due to the indeterminate timing parameter T_{p-p} (see TS 25.211, clause 7.3) it is not possible to determine the SFN and therefore the exact access slot set that should be used for PRACH preamble re-transmissions. It is only possible to determine a larger set based on allowed sub-channels.