Source: T1

Title: CR's to TS 34.123-1 v4.2.0 related to other packages test cases

Agenda item: 5.1.3

Document for: Approval

This document contains 32 CRs to TS 34.123-1 v4.2.0 related to other packages 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 RLC test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	194		Rel-4	Correction to RLC test case 7.2.3.28	F	4.2.0	4.3.0	T1-020319	TEI	R99, Rel-4
34.123-1	224		Rel-4	Correction to RLC conformance test 7.2.2.1	F	4.2.0	4.3.0	T1-020349	TEI	R99, Rel-4
34.123-1	241		Rel-4	Correction to Clause 7.2.3.29 RLC test case	F	4.2.0	4.3.0	T1-020366	TEI	R99, Rel-4
34.123-1	242		Rel-4	Correction to Clause 7.2.3.30 RLC test case	F	4.2.0	4.3.0	T1-020367	TEI	R99, Rel-4
34.123-1	243		Rel-4	Correction to Clause 7.2.3.31 RLC test case	F	4.2.0	4.3.0	T1-020368	TEI	R99, Rel-4

CR related to corrections to PDCP test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	180		Rel-4	Update of L2/PDCP testing in alignment to March version 2002	F	4.2.0	4.3.0	T1-020305	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	179		Rel-4	Correction to clause 8.3 except for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020304	TEI	R99, Rel-4
34.123-1	205		Rel-4	Correction to clause 8.2 except for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020330	TEI	R99, Rel-4
34.123-1	206		Rel-4	Correction to clause 8.4 except for Package 1 of TS34.123-1	F	4.2.0	4.3.0	T1-020331	TEI	R99, Rel-4
34.123-1	207		Rel-4	Correction to Annex.A of TS34.123-1	F	4.2.0	4.3.0	T1-020332	TEI	R99, Rel-4
34.123-1	213		Rel-4	Interfrequency Measurement for Events 2B and 2E – Correction to 8.4.1.25	F	4.2.0	4.3.0	T1-020338	TEI	R99, Rel-4
34.123-1	214		Rel-4	Correction to HCS Cell Reseletion tests	F	4.2.0	4.3.0	T1-020339	TEI	R99, Rel-4
34.123-1	247		Rel-4	Update of clause 8.3.2 URA Update to be applicable to 3.84 Mcps TDD and 1.28 Mcps TDD	F	4.2.0	4.3.0	T1-020416	TEI, LCRTDD	R99, Rel-4

CR related to addition of RRC test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Work item	Releases affected
34.123-1	208		Rel-4	Addition of generic test procedure to Annex C of TS 34.123-1	F	4.2.0	4.3.0	T1-020333	TEI	R99, Rel-4
34.123-1	209		Rel-4	Additional test cases according to T1S-020098 Hard Handover	F	4.2.0	4.3.0	T1-020334	TEI	R99, Rel-4
34.123-1	210		Rel-4	Additional test cases according to T1S-020099 State Transition	F	4.2.0	4.3.0	T1-020335	TEI	R99, Rel-4
34.123-1	211		Rel-4	New test case for Incompatible Simultaneous Security Reconfiguration	F	4.2.0	4.3.0	T1-020336	TEI	R99, Rel-4
34.123-1	212		Rel-4	New test case for Signalling Connection Release test case	F	4.2.0	4.3.0	T1-020337	TEI	R99, Rel-4

CR related to corrections to CC, 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	177		Rel-4	Modifications of MM test cases	F	4.2.0	4.3.0	T1-020302	TEI	R99, Rel-4
34.123-1	178		Rel-4	Update to GMM test cases	F	4.2.0	4.3.0	T1-020303	TEI	R99, Rel-4
34.123-1	197		Rel-4	Clarification of messages sequences in MM test case 9.4.1.	F	4.2.0	4.3.0	T1-020322	TEI	R99, Rel-4
34.123-1	199		Rel-4	Update to CC test cases	F	4.2.0	4.3.0	T1-020324	TEI	R99, Rel-4
34.123-1	200		Rel-4	Removal of TC9.5.3 MM connection / establishment in non-security mode	F	4.2.0	4.3.0	T1-020325	TEI	R99, Rel-4
34.123-1	249		Rel-4	Correction of conformance requirement in test case 11.1.4.3	F	4.2.0	4.3.0	T1-020418	TEI	R99, Rel-4
34.123-1	250		Rel-4	Correction in test case 11.4.1 Error cases	F	4.2.0	4.3.0	T1-020419	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	215		Rel-4	Changes to radio bearer tests in clause 14.4 Combinations on SCCPCH	F	4.2.0	4.3.0	T1-020340	TEI	R99, Rel-4
34.123-1	245		Rel-4	Update of package 2: RB test cases according to new ref RB test method	F	4.2.0	4.3.0	T1-020414	TEI	R99, Rel-4
34.123-1	246		Rel-4	Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (40 ms TTI) – Correction to 14.2.23c	F	4.2.0	4.3.0	T1-020415	TEI	R99, Rel-4

CR related to new Radio Bearer test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Workitem	Releases affected
34.123-1	217		Rel-4	Test case for approved new bearers	F	4.2.0	4.3.0	T1-020342	TEI	R99, Rel-4
34.123-1	248		Rel-4	New test for radio bearer	F	4.2.0	4.3.0	T1-020417	TEI	R99, Rel-4

CR related to corrections to common clauses:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version New	Doc-2nd-Level	Workitem	Releases affected
34.123-1	204		Rel-4	Correction of abbreviations reference	F	4.2.0	4.3.0	T1-020329	TEI	R99, Rel-4
34.123-1	223		Rel-4	CR to clause 3.1	F	4.2.0	4.3.0	T1-020348	TEI	R99, Rel-4

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

Tdoc T1-020302

3GPP TSG-T1/SIG Meeting #23
Lund, Sweden, 21st-23rd May, 2002

Tdoc T1S-020275

CR-Form-v5.1

CHANGE REQUEST

| ⌘ | **34.123-1** CR **177** | ⌘**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 **X**　Radio Access Network ☐　Core Network ☐

Title: ⌘	Modifications of MM test cases	
Source: ⌘	FUJITSU LIMITED, mmO2	
Work item code: ⌘	TEI	***Date:*** ⌘　13 May, 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: ⌘	- It is necessary to correct some test cases in order to keep consistency with the changes in TS 24.008. - The descriptions of some test cases are not suitable.

Summary of change: ⌘ 1. Modifications according to the changes in TS 24.008

The Conformance requirement, Initial conditions, Contents of the Expected sequence, and Test Requirement in the following test cases are modified.
 a) 9.4.2.2 Location updating / rejected / PLMN not allowed
 b) 9.4.2.3 Location updating / rejected / location area not allowed
 c) 9.4.2.5 Location updating / rejected / No Suitable Cells In Location Area

2. Modification of 9.4.5.4
 a) modify the Title in 9.4.5.4, 9.4.5.4.1, 9.4.5.4.2 and 9.4.5.4.3
 b) modify the Conformance requirement in 9.4.5.4.1 and 9.4.5.4.3
 c) modify the Test purpose in 9.4.5.4.1, 9.4.5.4.2 and 9.4.5.4.3
 d) modify the Contents of the Expected sequence in 9.4.5.4.1, 9.4.5.4.2 and
  9.4.5.4.3
 e) modify the Test requirement in 9.4.5.4.1

3. Modification of 9.4.6
 modify the expression in the Test procedure

4. Modifications of 9.4.7, 9.4.8 and 9.4.9
 a) modify the Conformance requirement, Test purpose, Initial conditions,
  Test procedure and Test requirement
 b) add the Expected sequence

Consequences if not approved:	⌘	Inconsistency with the core specification and miss description are remained.		

Clauses affected:	⌘	9.4.2.2, 9.4.2.3, 9.4.2.5, 9.4.5.4.1, 9.4.5.4.2, 9.4.5.4.3, 9.4.6, 9.4.7, 9.4.8, 9.4.9		
Other specs affected:	⌘	☐ Other core specifications ☒ **X** Test specifications ☐ O&M Specifications	⌘	TS 34.123-2
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.

9 Elementary procedures of mobility management

The tests are based on TS 24.008.

In this clause, when the expected sequence require that "a mobile originated CM connection is attempted", it shall be for a service other than emergency call.

In this clause, a initial CM message is either a SETUP message, a REGISTER message or a CP-DATA message (in that case the acknowledged mode of operation on SAPI 3 will have be established and this message will be sent on SAPI 3).

9.1 TMSI reallocation

The intention of the TMSI Reallocation procedure is to assign a new temporary identity for the UE. If the message is not understood by the UE, the network could not establish a link to the UE. As this is a common MM procedure, it can be initiated at any time.

9.1.1 Definition

9.1.2 Conformance requirement

1) A UE shall acknowledge a new TMSI when explicitly allocated during a location updating procedure or an incoming call.

2) The TMSI shall be updated on the USIM when the UE is correctly deactivated in accordance with the manufacturer's instructions.

3) A UE shall answer paging with this TMSI and includes it in the PAGING RESPONSE message.

Reference(s)

TS 24.008 clause 4.3.1.

9.1.3 Test purpose

To verify that the UE is able to receive and acknowledge a new TMSI by means of an explicit TMSI reallocation procedure.

To verify that the UE has stored the TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in clause 9.4.1.

9.1.4 Method of test

Initial conditions

- System Simulator:

  - two cells A and B, belonging to different location areas a and b, default parameters.

- User Equipment:

  - the UE has valid TMSI (= TMSI1), CKSN, CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

Switch off button Yes/No.

Way to bring the UE into service.

Test Procedure

The UE is paged in cell B and the security mode is established. An explicit TMSI reallocation procedure is performed. The RRC CONNECTION is released. The UE is switched off and then its power supply is interrupted for 10 s. The power supply is resumed and then the UE is switched on and allowed sufficient time to guarantee that the UE is in service (listening to its paging subchannel). The system simulator then checks, by paging, whether the UE has stored the received TMSI.

The UE is made to select cell A. A normal location updating procedure is performed in cell A. An explicit TMSI reallocation procedure is performed and then the location updating procedure is accepted by the SS. The system simulator checks, by paging, whether the UE has stored the allocated TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
1	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI1. Establishment Cause: Terminating Conversation Call.
2		→	PAGING RESPONSE	"Mobile identity" =TMSI1
2a	←		AUTHENTICATION REQUEST	
2b		→	AUTHENTICATION RESPONSE	
3	←		SECURITY MODE COMMAND	
4		→	SECURITY MODE COMPLETE	
5	←		TMSI REALLOCATION COMMAND	"Mobile identity" = new TMSI (TMSI2) different from TMSI 1.
6		→	TMSI REALLOCATION COMPLETE	
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8		→	RRC CONNECTION RELEASE COMPLETE	
9	UE			If possible (see ICS), the UE is switched off.
9a	UE			The power supply is interrupted for 10 s.
10	UE			The UE is switched on.
11		SS		The SS waits an amount of time which is enough to guarantee that the UE is in service (listening to its paging subchannel).
12	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = TMSI2. Establishment Cause: Terminating Conversation Call.
13		→	PAGING RESPONSE	"Mobile identity" =TMSI2.
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The following messages are sent and shall be received on cell A
15		→	RRC CONNECTION RELEASE COMPLETE	
16		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell" (see note)
17		→	RRC CONNECTION REQUEST	Establishment cause: Registration.
18	←		RRC CONNECTION SETUP	
19		→	RRC CONNECTION SETUP COMPLETE	
20		→	LOCATION UPDATING REQUEST	location updating type = normal, "ciphering key sequence number" = CKSN, LAI = b, "mobile identity" = TMSI2.
20a	←		AUTHENTICATION REQUEST	
20b		→	AUTHENTICATION RESPONSE	
20c	←		SECURITY MODE COMMAND	
20d		→	SECURITY MODE COMPLETE	
21	←		TMSI REALLOCATION COMMAND	TMSI = TMSI1.
22		→	TMSI REALLOCATION COMPLETE	
23	←		LOCATION UPDATING ACCEPT	This message does not contain the optional Mobile Identity field.
24	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is "idle updated" on cell A.
25		→	RRC CONNECTION RELEASE COMPLETE	
26	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI1). "Establishment cause": Terminating Conversational Call.
27		→	PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI1).
28	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.

Step	Direction		Message	Comments
	UE	**SS**		
29		→	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.

9.1.5 Test requirement

At step 5 the UE shall receive and acknowledge a new TMSI (TMSI2) and has stored that in the USIM, and the UE is switched off and on after step 9 and 10.

At step 13 the UE shall transmit a new TMSI2 and includes it in the PAGING RESPONSE message.

At step 27 the UE shall answer paging with this TMSI1 and includes it in the PAGING RESPONSE message.

9.2 Authentication

The purpose of this procedure is to verify the user identity. A correct response is essential to guarantee the establishment of the connection. If not, the connection will drop.

The SS shall be able to handle vectors of AUTN, RAND, CK, IK, AUTS and XRES in a similar way as the MSC/BSS entities. The SS and test USIM shall incorporate a test algorithm for generating RES and CK, IK from RAND, AUTN and IK which operates as described in TS 34.108 clause 8.1.2.

9.2.1 Authentication accepted

9.2.1.1 Definition

9.2.1.2 Conformance requirement

1) A UE shall correctly respond to an AUTHENTICATION REQUEST message by sending an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the one produced by the authentication algorithm in the network.

2) A UE shall indicate in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

Reference(s)

TS 24.008 clauses 4.3.2.2 and 4.3.2.4.

9.2.1.3 Test purpose

1) To check that a UE correctly responds to an AUTHENTICATION REQUEST message by sending an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the one produced by the authentication algorithm in the network.

2) To check that a UE indicates in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

9.2.1.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE has valid TMSI, CKSN (CKSN1), CK, IK. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

None.

Test Procedure

The UE is paged. After the UE has sent a PAGING RESPONSE message to the SS, the SS initiates an authentication procedure and checks the value RES sent by the UE in the AUTHENTICATION RESPONSE message. The RRC CONNECTION is released. The UE is paged and the SS checks the value of the ciphering key sequence number sent by the UE in the PAGING RESPONSE message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	CKSN = CKSN1
3	←		AUTHENTICATION REQUEST	The SS initiates authentication with CKSN2 different from CKSN1.
4	→		AUTHENTICATION RESPONSE	"Auth. parameter RES" IE shall be bit exact with the value as produced by the authentication algorithm.
5	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.
6	→		RRC CONNECTION RELEASE COMPLETE	
7			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
8	→		PAGING RESPONSE	"Ciphering key sequence number" shall be the same as the value that was sent in the last AUTHENTICATION REQUEST message (= CKSN2).
9	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.2.1.5 Test requirement

1) At step 4 the UE shall send an AUTHENTICATION RESPONSE message with the RES information field set to the same value as the XRES calculated by the SS.

2) At step 8 the UE shall indicate in a PAGING RESPONSE message the ciphering key sequence number which was allocated to it through the authentication procedure.

9.2.2 Authentication rejected by the network

9.2.2.1 Definition

9.2.2.2 Conformance requirement

1) After reception of an AUTHENTICATION REJECT message the UE shall:

   1.1 not perform normal location updating;

   1.2 not perform periodic location updating;

   1.3 not respond to paging with TMSI;

   1.4 reject any request from CM entity for MM connection except for emergency call;

   1.5 not perform IMSI detach if deactivated.

2) After reception of an AUTHENTICATION REJECT message the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.

3) After reception of an AUTHENTICATION REJECT message the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.3.2.5.

9.2.2.3 Test purpose

1) To check that ,after reception of an AUTHENTICATION REJECT message, the UE:

   1.1 does not perform normal location updating;

   1.2 does not perform periodic location updating;

   1.3 does not respond to paging with TMSI;

   1.4 rejects any request from CM entity for MM connection except for emergency call;

   1.5 does not perform IMSI detach if deactivated.

2) To check that, after reception of an AUTHENTICATION REJECT message the UE, if it supports speech, accepts a request for an emergency call by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call" and includes an IMEI as mobile identity in the CM SERVICE REQUEST message.

3) To check that, after reception of an AUTHENTICATION REJECT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

9.2.2.4 Method of test

Initial conditions

- System Simulator:

  - two cells: A and B, belonging to different location areas a and b;

  - IMSI attach/detach is allowed in both cells;

  - the T3212 time-out value is 1/10 hour in both cells.

- User Equipment:

    - the UE has valid TMSI, CKSN (CKSN2) , CK and IK. It is "idle updated" on cell B.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test procedure

The SS rejects an authentication. The RRC CONNECTION is released. The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if USIM detachment is performed, switch off is performed, or the power is removed, depending on the UE (see ICS/IXIT).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B				
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call..
2	→		PAGING RESPONSE	"Ciphering key sequence number" shall be the same as the value that was sent in the last AUTHENTICATION REQUEST message (= CKSN2).
3		←	AUTHENTICATION REQUEST	
4	→		AUTHENTICATION RESPONSE	
5		←	AUTHENTICATION REJECT	
6		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
7	→		RRC CONNECTION RELEASE COMPLETE	
8		←	PAGING TYPE 1	The UE is paged in cell B. "UE identity " IE contains TMSI. Paging Cause: Terminating Conversational Call.
9	UE			The UE shall ignore this message. This is verified during 3 s.
10	SS			The SS waits for at least for 15 s.
11	UE			A MO CM connection is attempted.
12	UE			The UE shall not initiate an RRC connection establishment on cell A or cell B. This is checked during 3 s.
13	UE			If the UE supports speech (see ICS), an emergency call is attempted.
14	→		RRC CONNECTION REQUEST	"Establishment cause": Emergency call.
15		←	RRC CONNECTION SETUP	
16	→		RRC CONNECTION SETUP COMPLETE	
17	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment. "Mobile identity": type of identity is set to IMEI.
18		←	CM SERVICE ACCEPT	
19	→		EMERGENCY SETUP	
20		←	RELEASE COMPLETE	"Cause" = unassigned number.
21		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
22	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
23	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
24	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 29). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
25	SS			The SS waits at least 7 minutes for a possible periodic updating.
26	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
27	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
28	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
29	UE			Depending on what has been performed in step 26 the UE is brought back to operation.
30	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
31		←	RRC CONNECTION SETUP	
32	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
33	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
34		←	AUTHENTICATION REQUEST	"CKSN" = CKSN1.
35	→		AUTHENTICATION RESPONSE	
36		←	LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
37	→		TMSI REALLOCATION COMPLETE	
38		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.2.2.5 Test requirement

1)

1.1 At step 24 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.2 At step 25 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.3 At step 9 the UE shall not respond to paging.

1.4 At step 12 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

1.5 At step 28 the UE shall not send any RRC CONNECTION REQUEST on cell A or on cell B.

2) At step 14 the UE shall send a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call"; and at step 17 the UE shall send a CM SERVICE REQUEST message with the "CM service type" set to "Emergency call establishment".

3) At step 33 the UE shall perform location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN.

9.2.3 Authentication rejected by the UE (MAC code failure)

9.2.3.1 Definition

Following a UMTS authentication challenge, the UE may reject the core network, on the grounds of an incorrect AUTN parameter (see TS 33.102).

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, it shall send an AUTHENTICATION FAILURE message to the network, with the reject cause 'MAC failure'.

9.2.3.2 Conformance requirement

1) A UE shall correctly respond to an AUTHENTICATION REQUEST message 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) Upon reception of an IDENTITY REQUEST message, the UE shall identify itself by sending an IDENTITY RESPONSE message including the IMSI to the network.

3) 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 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 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 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 that upon reception of an IDENTITY REQUEST message the UE identifies itself by sending an IDENTITY RESPONSE message including the IMSI to the network.

3) To verify 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 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 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 Establishment Cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	CKSN = CKSN1
3		←	AUTHENTICATION REQUEST	with the AUTN parameter having an invalid MAC code
4	→		AUTHENTICATION FAILURE	with reject cause "MAC failure"
5		←	IDENTITY REQUEST	
6	→		IDENTITY RESPONSE(IMSI)	
7		←	AUTHENTICATION REQUEST	with the AUTN parameter having a correct MAC code
8	→		AUTHENTICATION RESPONSE	"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) A UE shall correctly respond to an AUTHENTICATION REQUEST message by sending an AUTHENTICATION FAILURE message with the reject cause 'Synch failure' and parameter (AUTS) provided by the USIM (see TS 33.102).

2) 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 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 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.

9.3 Identification

The purpose of this procedure is to check that the UE gives its identity as requested by the network. If this procedure does not work, it will not be possible for the network to rely on the identity claimed by the UE.

9.3.1 General Identification

9.3.1.1 Definition

9.3.1.2 Conformance requirement

1) When requested by the network the UE shall send its IMSI.

2) When requested by the network the UE shall send the TMSI which it was previously allocated.

3) When requested by the network the UE shall send its IMEI as stored in the UE.

4) When requested by the network the UE shall send its IMEISV as stored in the UE.

Reference(s)

TS 24.008 clause 4.3.3.

9.3.1.3 Test purpose

1) To verify that the UE sends identity information as requested by the system in the following cases: IMSI and TMSI are requested in non-security mode, IMEI is requested in security mode.

2) To verify that the UE sends its IMEI, when requested to do so, in non- security mode.

3) To verify that the UE sends its IMEISV, when requested to do so, in non- security mode.

9.3.1.4 Method of test

9.3.1.4.1 Identification / test 1

Initial conditions

- System Simulator:

    - 1 cell, default values.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated" on the cell.

Related ICS/IXIT statement(s)

IMEI of the UE.

Test Procedure

The SS requests identity information from the UE:

- IMSI in non security mode;

- allocated TMSI in non security mode;

- IMEI in security mode.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	
3		←	IDENTITY REQUEST	"Identity type" IE is IMSI.
4	→		IDENTITY RESPONSE	"Mobile identity" IE specifies the IMSI of the UE.
5		←	IDENTITY REQUEST	"Identity type" IE is TMSI.
6	→		IDENTITY RESPONSE	"Mobile identity" IE specifies the allocated TMSI of the UE.
7		←	SECURITY MODE COMMAND	
8	→		SECURITY MODE COMPLETE	
9		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
10	→		IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI stored in the UE.
11		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.3.1.4.2 Identification / test 2

Initial conditions

- System Simulator:

    - 1 cell, default values.

- User Equipment:

    - the UE has a valid TMSI. It is in "idle updated".

Related ICS/IXIT statement(s)

IMEI of the UE.

IMEISV of the UE.

Test Procedure

The SS requests identity information from the UE:

- IMEI in non security mode;

- IMEISV in non security mode.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 Establishment Cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	
3		←	IDENTITY REQUEST	"Identity type" IE is IMEI.
4	→		IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEI of the UE.
5		←	IDENTITY REQUEST	"Identity type" IE is IMEISV.
6	→		IDENTITY RESPONSE	"Mobile identity" IE specifies the IMEISV of the UE.
7		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.3.1.5 Test requirement

1) At step 4 in test 1 and test 2 the UE shall send its IMSI.

2) At step 6 in test 1 the UE shall send the TMSI which it was previously allocated.

3) At step 10 in test 1 the UE shall send its IMEI as stored in the UE.

4) At step 6 in test 2 the UE shall send its IMEISV as stored in the UE.

9.3.2 Handling of IMSI shorter than the maximum length

9.3.2.1 Definition

9.3.2.2 Conformance requirement

The UE shall be capable of handling an IMSI that is not of the maximum length.

Reference(s)

TS 24.008 clause 10.5.1.4.

9.3.2.3 Test purpose

To check that the UE behaves correctly when activated with an IMSI of length less than the maximum length.

In this condition, the UE shall:

- perform location updating;

- answer to paging with IMSI;

- give the correct IMSI when asked by an IDENTITY REQUEST;

- attempt CM connection establishment when requested to;

- attempt call re-establishment when needed;

- attempt IMSI detach when needed;

- erase its TMSI when the IMSI is sent by the network in a LOCATION UPDATING ACCEPT or a TMSI REALLOCATION COMMAND message.

9.3.2.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default values;

    - IMSI attach/detach bit set to "1".

- User Equipment:

    - the UE has no valid TMSI;

    - it is "idle updated";

    - the IMSI has the value 001011234.

Related ICS/IXIT statement(s)

On/Off switch - Yes/No.

Foreseen final state of UE

The UE has no valid TMSI. It is in "idle, updated".

Test Procedure

The UE is paged with its IMSI. The UE shall answer to paging and include the correct IMSI in the PAGING RESPONSE message. During call establishment, the SS asks for the IMSI of the UE. The UE shall answer by an IDENTITY RESPONSE message including the correct IMSI. During the active phase of the call, the SS modifies the scrambling code of DL DPCH. The UE performs call re-establishment. The UE shall include the correct IMSI in the CM RE-ESTABLISHMENT message. a TMSI REALLOCATION COMMAND including a TMSI is sent to the UE. The UE acknowledges this message. The call is release.

The UE is paged with its TMSI. The UE shall answer to paging and includes its TMSI in the PAGING RESPONSE message. During call establishment, the SS sends a TMSI REALLOCATION COMMAND including the IMSI to the UE. The UE shall acknowledge this message. The UE shall erase its TMSI. The call is released.

The UE is switched off or has its power source removed. The UE performs IMSI detach. The UE shall include the correct IMSI in the IMSI DETACH INDICATION message.

The UE is switched on or powered on. The UE performs IMSI attach. The UE shall include the correct IMSI in the LOCATION UPDATING REQUEST message. A TMSI is allocated to the UE.

The LAC of the cell is changed. The UE performs location updating. The SS includes the IMSI in the LOCATION UPDATING ACCEPT message.

A mobile originated CM connection is attempted. The UE shall include the correct IMSI in the CM SERVICE REQUEST message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains IMSI of UE. Establishment cause: Terminating Conversational Call.
2	→		PAGING RESPONSE	"mobile identity" contains the IMSI of the UE.
3	←		IDENTITY REQUEST	"identity type" IE is IMSI.
4	→		IDENTITY RESPONSE	"mobile identity" IE contains the IMSI of the UE.
5				The call is established using the sequence of the generic terminating call set-up procedure.
6		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
6a	→		CELL UPDATE	CCCH.
6b	←		RRC CONNECTION RELEASE	CCCH.
6c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
7	→		RRC CONNECTION REQUEST	
8	←		RRC CONNECTION SETUP	
9	→		RRC CONNECTION SETUP COMPLETE	
10	→		CM REESTABLISHMENT REQUEST	"mobile identity" IE contains IMSI of the UE.
10a	←		AUTHENTICATION REQUEST	
10b	→		AUTHENTICATION RESPONSE	
10c	←		SECURITY MODE COMMAND	
10d	→		SECURITY MODE COMPLETE	
11	←		TMSI REALLOCATION COMMAND	"mobile identity" contains a TMSI.
12	→		TMSI REALLOCATION COMPLETE	
13	←		RRC CONNECTION RELEASE	After sending this message, the SS waits for the disconnection of the main signalling link.
14	→		RRC CONNECTION RELEASE COMPLETE	
15	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains TMSI of UE. Establishment cause: Terminating Conversational Call.
16	→		PAGING RESPONSE	"mobile identity" contains the TMSI of the UE.
17	←		AUTHENTICATION REQUEST	
18	→		AUTHENTICATION RESPONSE	
18a	←		SECURITY MODE COMMAND	
18b	→		SECURITY MODE COMPLETE	
19	←		TMSI REALLOCATION COMMAND	"mobile identity" contains a IMSI of UE.
20	→		TMSI REALLOCATION COMPLETE	
21	←		RRC CONNECTION RELEASE	
22	→		RRC CONNECTION RELEASE COMPLETE	
23		UE		If possible (see ICS) the UE is switched off, otherwise the UE has its power source removed.
24	→		RRC CONNECTION REQUEST	If the UE was switched off it performs IMSI detach. "Establishment cause": Detach
25	←		RRC CONNECTION SETUP	
26	→		RRC CONNECTION SETUP COMPLETE	
27	→		IMSI DETACH INDICATION	"mobile identity" contains IMSI of UE.
28	←		RRC CONNECTION RELEASE	
29	→		RRC CONNECTION RELEASE COMPLETE	
30		UE		The UE is switched on or has power restored.
31	→		RRC CONNECTION REQUEST	
32	←		RRC CONNECTION SETUP	
33	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
34	→		LOCATION UPDATING REQUEST	"mobile identity" contains IMSI of UE.
35	←		LOCATION UPDATING ACCEPT	"mobile identity" contains a TMSI.
36	→		TMSI REALLOCATION COMPLETE	
37	←		RRC CONNECTION RELEASE	
38	→		RRC CONNECTION RELEASE COMPLETE	
39		SS		The SS changes the LAC of the cell.
40	→		RRC CONNECTION REQUEST	Shall be sent within 35s of the LAC being changed.
41	←		RRC CONNECTION SETUP	
42	→		RRC CONNECTION SETUP COMPLETE	
43	→		LOCATION UPDATING REQUEST	"mobile identity" contains TMSI of the UE.
44	←		LOCATION UPDATING ACCEPT	"mobile identity" contains IMSI of the UE.
45	←		RRC CONNECTION RELEASE	
46	→		RRC CONNECTION RELEASE COMPLETE	
47	UE			a mobile originated CM connection is attempted.
48	→		RRC CONNECTION REQUEST	
49	←		RRC CONNECTION SETUP	
50	→		RRC CONNECTION SETUP COMPLETE	
51	→		CM SERVICE REQUEST	"mobile identity" contains IMSI of the UE.
52	←		RRC CONNECTION RELEASE	
53	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.3.2.5 Test requirement

At step 34 the UE shall performs location updating.

At step 2 the UE shall answer to paging with IMSI.

At step 4 the UE shall answer the correct IMSI to the SS by an IDENTITY RESPONSE message.

At step 51 the UE shall attempt CM connection establishment and include the correct IMSI in the CM SERVICE REQUEST message.

At step 10 the UE shall perform call re-establishment with the correct IMSI in the CM RE-ESTABLISHMENT message.

At step 19 the IMSI is sent by the network in a TMSI REALLOCATION COMMAND message, at step 27 the UE shall attempt IMSI detach.

At step 44 the IMSI is sent by the network in a LOCATION UPDATING ACCEPT message, at step 51 the UE shall attempt IMSI detach.

9.4 Location updating

This procedure is used to register the UE in the network. If it is not performed correctly, no call can be established.

9.4.1 Location updating / accepted

9.4.1.1 Definition

9.4.1.2 Conformance requirement

1.

1.1 if the network accepts a location updating from the UE and reallocates a TMSI in the LOCATION UPDATING ACCEPT message the UE shall acknowledge the reception of the new TMSI;

1.2 the UE shall answer to paging with this TMSI and include it in a PAGING RESPONSE message.

2 If the network accepts a location updating from the UE and the LOCATION UPDATING ACCEPT message contains neither TMSI nor IMSI, the UE shall answer to paging when addressed with the last allocated TMSI and include it in the PAGING RESPONSE message.

3.

3.1 if the network accepts a location updating from the UE by use of a LOCATION UPDATING ACCEPT message containing the IMSI of the UE, the UE shall not answer paging with the last allocated TMSI;

3.2 the UE shall still answer paging with IMSI.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.4.1.3 Test purpose

1) To test the behaviour of the UE if the network accepts the location updating of the UE.

For the network response three different cases are identified:

1.1) TMSI is allocated;

1.2) location updating accept contains neither TMSI nor IMSI;

1.3) location updating accept contains IMSI.

9.4.1.4 Method of test

Initial conditions:

- System Simulator:

  - two cells, A and B, belonging to different location areas with location area identification a and b of the same PLMN;

  - IMSI attach/detach is allowed in both cells;

  - the T3212 time-out value is 1/10 hour in both cells.

- User Equipment:

  - the UE has a valid TMSI (=TMSI1) and CKSN (=CKSN1). It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

None.

Test Procedure

The UE is made to select cell B. A normal location updating with TMSI reallocation is performed in cell B. The RRC CONNECTION is released. The SS checks, by paging, that the UE has stored the newly allocated TMSI. The RRC CONNECTION is released. The UE is made to select cell A. A normal location updating is performed in cell A. The LOCATION UPDATING ACCEPT message contains neither IMSI nor TMSI. The SS checks, by paging, that the UE has kept the old TMSI. The RRC CONNECTION is released. The UE is made to select cell B. A normal location updating is performed in cell B. The LOCATION UPDATING ACCEPT message contains an IMSI. The SS checks, by paging, that the UE has deleted its TMSI and responds to paging with IMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI1.
5a	←		SECURITY MODE COMMAND	
5b	→		SECURITY MODE COMPLETE	
6	←		LOCATION UPDATING ACCEPT	"Mobile identity" = new TMSI (=TMSI2), LAI = b.
7	→		TMSI REALLOCATION COMPLETE	
8	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.
9	→		RRC CONNECTION RELEASE COMPLETE	
10	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI2). Establishment Cause: Terminating Conversational Call.
11	→		PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI2).
12	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
13	→		RRC CONNECTION RELEASE COMPLETE	
14		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
15	→		RRC CONNECTION REQUEST	"Establishment cause": Registration
16	←		RRC CONNECTION SETUP	
17	→		RRC CONNECTION SETUP COMPLETE	
18	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = b, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2.
19	←		LOCATION UPDATING ACCEPT	"Mobile identity" IE not included.
20	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.
21	→		RRC CONNECTION RELEASE COMPLETE	
22	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.12.2 "Initial UE identity" IE contains the TMSI (= TMSI2). Establishment Cause: Terminating Conversational Call.
23	→		PAGING RESPONSE	"Mobile identity" IE contains the TMSI (=TMSI2).

Step	Direction UE | SS	Message	Comments
24	←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
25	→	RRC CONNECTION RELEASE COMPLETE	
26	SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
27	→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
28	←	RRC CONNECTION SETUP	
29	→	RRC CONNECTION SETUP COMPLETE	
30	→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2.
31	←	LOCATION UPDATING ACCEPT	"Mobile identity" IE contains IMSI.
32	←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.
33	→	RRC CONNECTION RELEASE COMPLETE	
34	←	PAGING TYPE 1	"UE identity" IE contains the old TMSI (= TMSI2). Paging Cause: Terminating Conversational Call.
35	UE		The UE shall ignore this message. This is checked during 5 s.
36	←	Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the IMSI. Establishment Cause: Terminating Conversational Call.
37	→	PAGING RESPONSE	"Mobile identity" IE contains the IMSI.
38	←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39	→	RRC CONNECTION RELEASE COMPLETE	
NOTE:		The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.1.5 Test requirement

At step 7 the UE shall acknowledge the reception of the new TMSI (TMSI2).

At step 11 the UE shall answer to paging with this TMSI (TMSI2).

At step 23 the UE shall answer to paging with the last allocated TMSI (TMSI2).

At step 35 the UE shall not answer paging with the last allocated TMSI, but at step 37 the UE shall still answer paging with IMSI.

9.4.2 Location updating / rejected

9.4.2.1 Location updating / rejected / IMSI invalid

9.4.2.1.1 Definition

9.4.2.1.2 Conformance requirement

1) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall:

   1.1 not perform normal location updating;

   1.2 not perform periodic location updating;

   1.3 not respond to paging with IMSI;

   1.4 not respond to paging with TMSI;

   1.5 reject any request from CM entity for MM connection other than for emergency call;

   1.6 not perform IMSI detach if it is switched off or has its power source removed.

2) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call" and include an IMEI as mobile identity in the CM SERVICE REQUEST message.

3) If the network rejects a location updating from the UE with the cause "IMSI unknown in HLR", "Illegal MS" or "Illegal ME" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.1.3 Test purpose

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

9.4.2.1.4 Method of test

Initial conditions

- System Simulator:

  - two cells: A and B, belonging to different location areas of the same PLMN;

  - IMSI attach/detach is allowed in both cells;

  - the T3212 time-out value is 1/10 hour in both cells.

- User Equipment:

  - the UE has valid TMSI(= TMSI1), CKSN(= CKSN1) and CK, IK. It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

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

Switch off on button Yes/No.

Support for speech Yes/No.

Test Procedure

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

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

Expected sequence

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

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

Step	Direction		Message	Comments
	UE	SS		
30	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
31	UE			Depending on what has been performed in step 29~~31~~ the UE is brought back to operation.
32	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
33	←		RRC CONNECTION SETUP	
34	→		RRC CONNECTION SETUP COMPLETE	
35	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
36	←		AUTHENTICATION REQUEST	"CKSN" = CKSN2~~1~~.
37	→		AUTHENTICATION RESPONSE	
38	←		LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
39	→		TMSI REALLOCATION COMPLETE	
40	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
41	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.2.1.5 Test requirement

1) 1.1 At step 10 the UE shall not perform normal location updating.

    1.2 At step 12 the UE shall not perform periodic location updating.

    1.3 At step 14 the UE shall not respond to paging with IMSI.

    1.4 At step 16 the UE shall not respond to paging with TMSI.

    1.5 At step 18 the UE shall reject a MO CM connection.

    1.6 At step 30 the UE shall not initiate an RRC connection establishment on cell A or on cell B.

2) At step 20 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".

3) At step 35 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the LAI IE set to "deleted LAI" on cell A.

9.4.2.2 Location updating / rejected / PLMN not allowed

9.4.2.2.1 Definition

9.4.2.2.2 Conformance requirement

1) If the network reject a location updating from the UE with the cause "PLMN not allowed" the UE shall:

    1.1 not perform periodic updating;

    1.2 not perform IMSI detach when switched off;

    1.3 not perform IMSI attach when switched on in the same location area;

    1.4 not perform normal location updating when in the same PLMN and when that PLMN is not selected manually;

    1.5 reject any request from CM entity for MM connection other than for emergency call.

2) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall:

    2.1 perform normal location updating when a new PLMN is entered;

    2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call".

3) If the network rejects a location updating from the UE with the cause "PLMN not allowed" and if after that the PLMN from which this rejection was received, is manually selected, the UE shall perform a normal location updating procedure.

4) If the network rejects a location updating from the UE with the cause "PLMN not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.2.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "PLMN not allowed".

9.4.2.2.4 Method of test

9.4.2.2.4.1 Location updating / rejected / PLMN not allowed / test 1

Initial conditions

- System Simulator:

    - one cell: C, belonging to PLMN1;

    - two cells: A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN and from PLMN1;

    - IMSI attach/detach is allowed in cells A and B but not in cell C;

    - the T3212 time-out value is 1/10 hour in cells A and B.

- User Equipment:

    - the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell C;

    - the UE is in manual mode for PLMN selection.

Related ICS/IXIT statement(s)

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

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Support for speech Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not perform IMSI detach, does not perform IMSI attach if activated in the same location area, rejects any request for CM connection establishment other than emergency call, accepts a request for an emergency call, ~~and~~ performs normal location updating only when a new PLMN is entered and deletes the stored LAI, CKSN and TMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1 2	UE SS			The following messages are sent and shall be received on cell B. The UE is switched off (or power is removed). Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "non-suitable cell". (see note)
3	UE			The UE is switched on. (or power is reapplied) If necessary the UE is put in manual selection mode. The UE shall offer the new PLMN as available to the user. The PLMN is manually selected.
4		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
5		←	RRC CONNECTION SETUP	
6		→	RRC CONNECTION SETUP COMPLETE	
7		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = c, "Mobile Identity" = TMSI1
8		←	LOCATION UPDATING REJECT	"Reject cause" = PLMN not allowed.
9		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10		→	RRC CONNECTION RELEASE COMPLETE	
11 12	SS UE			The SS waits for a possible periodic updating for 7 minutes. The UE shall not initiate an RRC connection establishment on cell A or on cell B.
13 14	UE UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
15 16	UE UE			Depending on what has been performed in step 13 the UE is brought back to operation. The UE is not made to select PLMN 2. The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
17 18	SS UE			The following message are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note) No access to the network shall be registered by the SS within one minute.
19	UE			If the UE supports speech (see ICS) it is made to perform an emergency.
20		→	RRC CONNECTION REQUEST	"Establishment cause": Emergency Call.
21		←	RRC CONNECTION SETUP	
22		→	RRC CONNECTION SETUP COMPLETE	
23		→	CM SERVICE REQUEST	"CM service type" = Emergency call establishment.
24		←	CM SERVICE ACCEPT	
25		→	EMERGENCY SETUP	
26		←	RELEASE COMPLETE	Cause IE: "unassigned number".

Step	Direction		Message	Comments
	UE	**SS**		
27	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
28	→		RRC CONNECTION RELEASE COMPLETE	
29	UE			A MO CM connection is attempted.
30	UE			The UE shall not initiate an RRC connection establishment. This is checked during 3 s.
				The following messages are sent and shall be received on cell C.
31	UE			The UE is switched off.
32	SS			Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note)
33	UE			The UE is switched on. If necessary the UE is placed into the automatic mode.
34	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
35	←		RRC CONNECTION SETUP	
36	→		RRC CONNECTION SETUP COMPLETE	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.
38	←		LOCATION UPDATING ACCEPT	"Mobile identity" = TMSI.
39	→		TMSI REALLOCATION COMPLETE	
40	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
41	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents:

None.

9.4.2.2.4.2 Location updating / rejected / PLMN not allowed / test 2

Initial conditions

- System Simulator:

    - one cell C, belonging to PLMN1;

    - two cells A and B, belonging to different location areas a and b and belonging to PLMN2. PLMN2 is different from HPLMN;

    - IMSI attach/detach is allowed in cells A and B but not in cell C;

    - the T3212 time-out value is 1/10 hour in cells A and B.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated" on cell C.

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedure

The SS rejects a normal location updating with the cause value "PLMN not allowed". The RRC CONNECTION is released. Then the PLMN from which this rejection was received is manually selected and the SS checks that a normal location updating is performed.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell B.
1	UE			The UE is switched off (or power is removed).
2		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "non-suitable cell". (see note)
3	UE			The UE is switched on (or power is reapplied).
3a	UE			If the UE is in manual mode, it shall offer the new PLMN as available to the user. In this case the PLMN is manually selected.
4		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
5		←	RRC CONNECTION SETUP	
6		→	RRC CONNECTION SETUP COMPLETE	
7		→	LOCATION UPDATING REQUEST	
8		←	LOCATION UPDATING REJECT	"Reject cause" = PLMN not allowed.
9		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10		→	RRC CONNECTION RELEASE COMPLETE	
11	UE			The UE is made to search for PLMNs and the PLMN indicated by the SS is manually selected.
12		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
13		←	RRC CONNECTION SETUP	
14		→	RRC CONNECTION SETUP COMPLETE	
15		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.
16		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17		→	RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell C.				
18	UE			The UE is switched off.
19		SS		Set the cell type of cell C to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". Set the cell type of cell B to the "non-suitable cell". (see note)
20	UE			The UE is switched on. If necessary, the UE is put into the automatic mode.
21		→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
22		←	RRC CONNECTION SETUP	
23		→	RRC CONNECTION SETUP COMPLETE	
24		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "LAI" = deleted LAI (the MCC and MNC hold the values of PLMN1, the LAC is coded FFFE) "mobile identity" = IMSI.
25		←	LOCATION UPDATING ACCEPT	"Mobile identity" = TMSI.
26		→	TMSI REALLOCATION COMPLETE	
27		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
28		→	RRC CONNECTION RELEASE COMPLETE	
NOTE:			The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

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Specific message contents

None.

9.4.2.2.5 Test requirement

1) 1.1 At step 12 in test 1 the UE shall not perform periodic updating.

   1.2 At step 14 in test 1 the UE shall not initiate an RRC connection establishment (IMSI detach).

   1.3 At step 16 in test 1 the UE shall not initiate an RRC connection establishment (IMSI attach).

   1.4 At step 16 in test 1 the UE shall not perform normal location updating.

   1.5 At step 30 in test 1 the UE shall reject a MO CM connection.

2) 2.1 At step 37 in test 1 the UE shall perform normal location updating.

   2.2 At step 20 in test 1 the UE shall accept a request for an emergency call with the establishment cause set to "Emergency call".

3) At step 11 in test 2 the UE is made to search for PLMNs and the PLMN indicated by the SS is manually selected, and at step 15 the UE shall perform a normal location updating procedure.

4) At step 37 in test 1 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell C.

9.4.2.3 Location updating / rejected / location area not allowed

9.4.2.3.1 Definition

9.4.2.3.2 Conformance requirement

1) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:

   1.1 not perform periodic updating;

   1.2 not respond to paging with TMSI;

   1.3 reject any request from CM entity for MM connection other than for emergency call;

   1.4 not perform IMSI detach.

2) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall:

   2.1 perform normal location updating when a new location area is entered;

   2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION REQUEST message with the establishment cause set to "emergency call";

   2.3 delete the list of forbidden LAs after switch off (power off).

3) If the network rejects a location updating from the UE with the cause "Location Area not allowed" the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.3.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "Location Area not allowed".

To test that the UE deletes the list of forbidden LAs after switch off (power off).

9.4.2.3.4 Method of test

Initial conditions

- System Simulator:

    - two cells: A and B, belonging to different location areas a and b;

    - IMSI attach/detach is allowed in both cells;

    - the T3212 time-out value is 1/10 hour in both cells.

- User Equipment:

    - the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Support for speech Yes/No.

Method to clear the list of forbidden location areas periodically.

Test Procedure

The SS rejects a normal location updating with the cause value "Location Area not allowed". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic updating, does not respond to paging with TMSI, rejects any requests from CM entities for MM-connections except emergency calls, does not perform IMSI detach, performs normal location updating when a new location area is entered, and deletes the list of forbidden LAs when switched off and deletes the stored LAI, CKSN and TMSI.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note).
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "Mobile Identity" = TMSI1
6	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the mainsignalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		SS waits for a possible location updating for 7 minutes.
10	UE			The UE shall not initiate an RRC-connection establishment either on cell A or cell B.
11	←		PAGING TYPE 1	The UE is paged in cell B. "UE identity" = TMSI. Paging Cause: Terminating Conversational Call.
12	UE			The UE shall ignore this message. This is checked during 3 s.
13	UE			A MO CM connection is attempted.
14	UE			The UE shall not initiate an RRC connection establishment on cell A or cell B. This is checked during 3 s.
15	UE			If the UE supports speech (see ICS), it is made to perform an emergency call.
16	→		RRC CONNECTION REQUEST	"Establishment cause": Emergency call.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
20	←		CM SERVICE ACCEPT	
21	→		EMERGENCY SETUP	
22	←		RELEASE COMPLETE	Cause: "unassigned number".
23	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
24	→		RRC CONNECTION RELEASE COMPLETE	
25	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
26	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B (check for IMSI detach) This is checked during 3 s.
27	UE			Depending on what has been performed in step 25 the UE is brought back to operation.
28	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
29	←		RRC CONNECTION SETUP	
30	→		RRC CONNECTION SETUP COMPLETE	
31	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available,"LAI" = deleted LAI, "mobile identity" = IMSI (This checks the deletion of the forbidden lists)
32	←		LOCATION UPDATING REJECT	"Reject cause" = "Location Area not allowed".
33	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
34	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
35		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).

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Step	Direction		Message	Comments
	UE	SS		
36	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
37	←		RRC CONNECTION SETUP	
38	→		RRC CONNECTION SETUP COMPLETE	
39	→		LOCATION UPDATING REQUEST	
40	←		AUTHENTICATION REQUEST	
41	→		AUTHENTICATION RESPONSE	
42	←		LOCATION UPDATING ACCEPT	Mobile identity = TMSI.
43	→		TMSI REALLOCATION COMPLETE	
44	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
45	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.2.3.5 Test requirement

1) 1.1 At step 10 the UE shall not perform periodic updating.

1.2 At step 12 the UE shall not respond to paging with TMSI.

1.3 At step 14 the UE shall not initiate an RRC connection establishment.

1.4 At step 26 the UE shall not initiate an RRC connection establishment (IMSI detach).

2) 2.1 At step 39 the UE shall perform normal location updating.

2.2 At step 16 the UE shall accept a request for an emergency call.

2.3 At step 31 the UE shall send a LOCATION UPDATING REQUEST message on cell B~~with the LAI "deleted LAI"~~.

3) At step 31 the UE shall send a LOCATION UPDATING REQUEST message with Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and LAI IE set to "deleted LAI" on cell B.

9.4.2.4 Location updating / rejected / roaming not allowed in this location area

9.4.2.4.1 Definition

9.4.2.4.2 Conformance requirement

1) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:

1.1 not perform periodic updating;

1.2 not respond to paging with TMSI;

1.3 reject any request from CM entity for MM connection other than for emergency call;

1.4 not perform IMSI detach.

2) If the network rejects a location updating from the UE with the cause "Roaming not allowed in this location area" the UE shall:

    2.1 perform normal location updating when a new location area is entered;

    2.2 accept a request for an emergency call, if it supports speech, by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call";

    2.3 periodically search for its HPLMN.

3) The UE shall reset the list of "Forbidden location areas for roaming" when it is switched off or has its power source removed or when the USIM is removed.

4) The UE shall contain a list of "forbidden location areas for roaming". The location area identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a LOCATION UPDATE REJECT message is received with the cause "Roaming not allowed in this location area". The lists shall accommodate each 10 or more location area identifications.

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.4.3 Test purposes

Test purpose 1

To test that on receipt of a rejection using the Roaming cause code, the UE ceases trying to update on that cell, that this situation continues for at least one periodic location interval period, and that the corresponding list is re-set by switching off the UE or removing its power source.

Test purpose 2

To test that if no cell is available, the UE does not answer to paging with TMSI, rejects a request from CM entity other than for emergency calls.

Test purpose 3

To test that at least 6 entries can be held in the list of "forbidden location areas for roaming" (the requirement in is to store at least 10 entries. This is not fully tested by the third procedure).

Test purpose 4

To test that if a cell of the Home PLMN is available then the UE returns to it in preference to any other available cell.

Test purpose 5

To test that if the USIM is removed the list of "forbidden location areas for roaming" is cleared.

9.4.2.4.4 Method of test

Initial conditions

The initial conditions shall be met before each of the different procedures.

- System Simulator:

    - for procedures 1, 2, 3 and 5: Two cells A and B, belonging to different location areas of the same PLMN with LAI a and b. The MCC of that PLMN is the same as that of the HPLMN. The MNC of that PLMN is different from that of the HPLMN;

    - for procedure 4: three cells A, B, C of the same PLMN which is not the HPLMN with 3 different location area codes. Cells should differ in signal strength by 10 dB with cell A being the strongest and cell C the weakest. There should be a 20 dB range between A and C. A should be set to a level of - 40 dBm;

    - IMSI attach/detach is allowed in every cell;

-   the T3212 time-out value is 1/10 hour in every cell.

-   User Equipment:

    -   procedures 1, 2, 3 and 5: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B;

    -   procedure 4: The UE has valid TMSI, CKSN and CK, IK. It is "idle updated" on cell A;

    -   the list of "forbidden location areas for roaming" shall be empty (this may be achieved by either removing the USIM or switching the UE OFF then ON or removing the UE power source depending on ICS).

Related ICS/IXIT statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Method to clear the list of location areas for roaming periodically.

The UE is automatically in automatic mode after switch on Yes/No.

Test Procedures

Procedure 1:

-   The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The UE is turned off and then on. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on). This procedure is performed another time but the deletion of the list is checked while removing the USIM (instead of turning off the UE).

Procedure 2:

-   The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not answer to a paging message with TMSI, rejects a request from CM entity but supports an emergency call.

Procedure 3:

-   The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". This is done for 6 different location areas. Then the SS checks that the UE does not attempt to begin a location updating procedure on the non-allowed location areas.

Procedure 4:

-   The SS accepts a periodic location updating on a cell not belonging to the HPLMN. Then when the UE attempts to perform a periodic location updating to this cell, the SS rejects this location updating with the cause value "Roaming not allowed in this location area". Two cells are then available, one belonging to the HPLMN but with the weakest level. It is checked that the UE returns to its HPLMN.

Procedure 5: If USIM removal is possible while UE is powered:

-   The SS rejects a normal location updating with the cause value "Roaming not allowed in this location area". The RRC CONNECTION is released. The SS checks that the UE does not perform periodic location updating procedure. The USIM is removed and inserted in the UE. The SS checks that the UE performs location updating on the cell on which its location update request had been rejected (this checks that the LA is not the forbidden list after switch on).

Different types of UE may use different methods to periodically clear the list of forbidden areas (e.g. every day at 12am) for roaming. If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected sequence

The following procedure is used during the test:

- change_LAI (x):

  - the purpose of this procedure is to change the value of Location Area Identifier of cell x;

  - the Location Area Identifier of cell x shall be changed. The code shall be chosen arbitrarily but shall be different from any previously used in this procedure. The code shall have the same MCC as the Home PLMN and shall not have the same MNC as the Home PLMN.

Procedure 1

Step	Direction		Message	Comments
	UE	**SS**		
1	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	Location Updating Type = normal.
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	SS			The SS waits at least 7 minutes for a possible location updating.
10	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11	UE			If possible (see ICS) the UE is switched off. Otherwise if possible the power is removed.
12	UE			Depending on what has been performed in step 11 the UE is brought back to operation and placed in an automatic mode.
13	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
14	←		RRC CONNECTION SETUP	
15	→		RRC CONNECTION SETUP COMPLETE	
16	→		LOCATION UPDATING REQUEST	Location Updating Type = normal.
17	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
19	→		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".			

Procedure 2

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note).
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message is sent on cell A.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
				The following messages are sent and shall be received on cell B.
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16		SS		The SS waits for a possible location updating procedure on both cells A and B for 2 minutes.
17	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B within 2 minutes after the end of step 15.
18	←		PAGING TYPE 1	"UE identity" = TMSI. This message is sent on cell A and on cell B. Paging Cause: Terminating Conversational Call.
19	UE			The UE shall not initiate an RRC connection on cell A or on cell B. This is checked during 3 s.
20	UE			A MO CM connection is attempted.
21	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
The following messages are sent and shall be received on cell A. Steps 22 to 31 are performed if the UE supports speech.				
22	UE			An emergency call is attempted.
23	→		RRC CONNECTION REQUEST	"Establishment cause": Emergency Call.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	
26	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
27	←		CM SERVICE ACCEPT	
28	→		EMERGENCY SETUP	
29	←		RELEASE COMPLETE	"Cause" = unassigned number.
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
NOTE: The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Procedure 3

Step	Direction		Message	Comments
	UE	**SS**		
The following messages are sent and shall be received on cell A				
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	
13	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16		SS		Change_LAI (A) within 5 s after step 13.
The following messages are sent and shall be received on cell A.				
17	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
18	←		RRC CONNECTION SETUP	
19	→		RRC CONNECTION SETUP COMPLETE	
20	→		LOCATION UPDATING REQUEST	
21	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24		SS		Change_LAI (B) within 5 s after step 21.
The following messages are sent and shall be received on cell B.				
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	
29	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
32		SS		Change_LAI (A) within 5 s after step 29.
The following messages are sent and shall be received on cell A.				
33	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
34	←		RRC CONNECTION SETUP	
35	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
36	→		LOCATION UPDATING REQUEST	
37	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
38	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
40		SS		Change_LAI (B) within 5 s after step 37.
The following messages are sent and shall be received on cell B.				
41	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
42	←		RRC CONNECTION SETUP	
43	→		RRC CONNECTION SETUP COMPLETE	
44	→		LOCATION UPDATING REQUEST	
45	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
46	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
47	→		RRC CONNECTION RELEASE COMPLETE	
48		SS		The SS waits for a possible location updating procedure on both cells A and B for 7 minutes.
49		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B within 7 minutes after the end of step 47.
NOTE:	The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Procedure 4

Step	Direction		Message	Comments
	UE	**SS**		
The following messages are sent and shall be received on cell A.				
1		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes after the initial conditions have been established.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	Location Updating Type = periodic.
6	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The location area identity of cell C shall be changed to that of a location area in the Home PLMN.
10		SS		The SS waits for a periodic location updating procedure on cell A for 7 minutes.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message is sent on cell A within 7 minutes after the end of step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
15	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell C.				
18	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
22	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
23	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
24	→		RRC CONNECTION RELEASE COMPLETE	

Procedure 5

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell A.				
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING REJECT	"Reject cause" IE is "Roaming not allowed in this location area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The SS waits at least 7 minutes for a possible location updating.
10	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
11	UE			The USIM is removed.
12	UE			The USIM is inserted into the ME.
13	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
14	←		RRC CONNECTION SETUP	
15	→		RRC CONNECTION SETUP COMPLETE	
16	→		LOCATION UPDATING REQUEST	Location Updating Type = normal.
17	←		LOCATION UPDATING ACCEPT	"Mobile Identity" not IE included.
18	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
19	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:			The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.2.4.5   Test requirement

1) 1.1 At step 10 in Procedure 1 the UE shall not perform periodic updating.

   1.2 At step 19 in Procedure 2 the UE shall not respond to paging with TMSI.

   1.3 At step 21 in procedure 2 the UE shall not initiate an RRC connection establishment.

   1.4 After step 13 in Procedure 5 the UE shall perform location updating (at step 16; not perform IMSI detach).

2) 2.1 After step 9 in Procedure 2 the UE perform normal location updating (at step 12).

   2.2 At step 23 in Procedure 2 the UE shall initiate a RRC CONNECTION REQUEST message with the establishment cause set to "Emergency call";

   2.3 After step 14 in Procedure 4 the UE shall attempt to location updating with location updating type "periodic" (at step 21: periodically search for its HPLMN).

3) After step 12 in Procedure 5 the UE shall perform location updating (at step 16) when the USIM is removed.

4) At step 49 in Procedure 3 the UE shall not attempt to begin a location updating procedure.

9.4.2.5 Location updating / rejected / No Suitable Cells In Location Area

9.4.2.5.1 Definition

9.4.2.5.2 Conformance requirement

1) If the network rejects a location updating from the UE with the cause " No Suitable Cells In Location Area " the UE shall ~~:~~

~~1.1~~ perform normal location updating at a suitable cell in another location area in the same PLMN.~~;~~

~~1.2 delete the stored CKSN, LAI and TMSI.~~

Reference(s)

TS 24.008 clause 4.4.4.7.

9.4.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the location updating of the UE with the cause "No Suitable Cells In Location Area".

9.4.2.5.4 Method of test

Initial conditions

- System Simulator:

    - two cells: A and B, belonging to different location areas a and b and belonging to PLMN1;

    - one cell: C, belonging to PLMN2;

    - IMSI attach/detach is allowed in cells A, B and C;

- User Equipment:

    - the UE has a valid TMSI(= TMSI1) and CKSN(= CKSN1). It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

None.

Test Procedure

The SS rejects a normal location updating with the cause value "No Suitable Cells In Location Area". The RRC CONNECTION is released. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN, and shall perform normal location updating procedure in that cell

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell B.				
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "LAI" = a, "mobile station classmark 1" as given by the ICS and "Mobile Identity" = TMSI1.
6	←		LOCATION UPDATING REJECT	"Reject cause" = "No Suitable Cells In Location Area".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1~~no key available~~, "LAI" = a~~deleted LAI~~, "mobile station classmark 1" as given by the ICS, "Mobile Identity" = T~~I~~MSI1.
13	←		(void)~~AUTHENTICATION REQUEST~~	~~"CKSN" = CKSN2~~
14	→		(void)~~AUTHENTICATION RESPONSE~~	
15	←		SECURITY MODE COMMAND	
16	→		SECURITY MODE COMPLETE	
17	←		LOCATION UPDATING ACCEPT	Mobile identity = TMSI, LAI = a.
18	→		TMSI REALLOCATION COMPLETE	
19	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
20	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell" and "Suitable neighbour cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.2.5.5 Test requirement

At step 12 the UE shall perform normal location updating ~~with CKSN IE set to "no key available", LAI IE set to "deleted LAI" and Mobile Identity IE set to its IMSI~~.

9.4.3 Location updating / abnormal cases

9.4.3.1 Void

9.4.3.2 Location updating / abnormal cases / attempt counter less or equal to 4, LAI different

9.4.3.2.1 Definition

9.4.3.2.2 Conformance requirement

1) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure, if the attempt counter is smaller than 4 and after expiry of T3211, the UE shall resend its LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

2) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall:

   2.1 not answer to paging with the previously allocated TMSI;

   2.2 not perform the IMSI detach procedure, when switched off.

3) When a failure such as case e) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure and when an emergency call establishment is requested by the user the UE, if it supports speech, shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI and after acceptance by the network it shall send an EMERGENCY SETUP message.

4) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall use a request from CM entity other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

5) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall answer to paging with IMSI and shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.

6) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a normal location updating procedure the UE shall perform a normal location updating procedure as soon as it enters a new cell.

References

TS 24.008 clauses 4.4.4.2, 4.4.4.9.

9.4.3.2.3 Test purpose

To verify that the UE performs normal location updating procedures when its attempt counter is smaller than 4.

To check that the UE does not perform the IMSI detach procedure when "idle not updated".

To verify that when "idle not updated" the UE can perform an emergency call.

To verify that when "idle not updated" the UE uses requests from CM layer other than emergency call as triggering of a normal location updating procedure.

To verify that the UE performs a normal location updating procedure if it enters a new cell while being "idle not updated".

9.4.3.2.4 Method of test

Initial conditions

- System Simulator:

    - two cells: A and B of the same PLMN, belonging to different location areas with LAI a and b;

    - ATT flag shall be set to IMSI attach/detach allowed.

- User Equipment:

    - the UE is "idle updated" on cell A. A valid CKSN value is stored in the USIM and is noted "initial CKSN". A TMSI is allocated.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support for speech Yes/No.

Test Procedure

The UE is made to perform a normal location updating procedure. Five types of failure cases are triggered:

- sending of a Location Updating Reject with cause randomly chosen between all defined cause values except 2, 3, 6, 11, 12 and 13 (which trigger a different action) (case g of TS 24.008 clause 4.4.4.9);

- RRC connection failure (case d);

- sending of a RRC CONNECTION RELEASE message before the normal end of the procedure (case f);

- T3210 time-out (case e);

- RR connection establishment failure (case h).

As there is no stored LAI or the stored LAI is different from the broadcast LAI, and the attempt counter in the UE shall be lower than 4, the UE enters the state MM IDLE and substate ATTEMPTING TO UPDATE and waits for T3211 seconds before trying again a location updating procedure.

Then the behaviour of the UE in the MM IDLE state and ATTEMPTING TO UPDATE substate is checked, that is:

- not answer to paging with TMSI;

- not perform an IMSI detach procedure;

- support request for emergency call;

- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;

- perform normal location updating procedure when a new cell is entered.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
The following messages are sent and shall be received on cell B.				
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
2	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
8	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
9	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15			(void)	
15a	→		CELL UPDATE	CCCH.
15b	←		RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
21	→		RRC CONNECTION RELEASE COMPLETE	
22	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
23	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	
26	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
27	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
28	→		AUTHENTICATION RESPONSE	

Step	Direction		Message	Comments
	UE	**SS**		
28a		←	SECURITY MODE COMMAND	
28b	→		SECURITY MODE COMPLETE	
29		←	LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
30	→		TMSI REALLOCATION COMPLETE	
31		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
32	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
33	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
34	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
35		←	RRC CONNECTION SETUP	
36	→		RRC CONNECTION SETUP COMPLETE	
37	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
38	SS			performs step 6 with reject cause #100 and step 7.
38a	UE			performs step8.
39		←	PAGING TYPE 1	UE identity = old TMSI of the UE. This message is sent continuously to the UE during 8 s. Paging Cause: Terminating Conversational Call.
40	SS			The SS checks that there is no answer from the UE during 12 s.
41	SS			If during steps 39 and 40 the UE attempts to perform a location updating procedure the SS will perform step 38 and then continue the procedure.
42	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) mobile switch off is performed. Otherwise the power is removed.
43	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during 30 s.
44	UE			Depending on what has been performed in step 42 the UE is brought back to operation.
45	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
46		←	RRC CONNECTION SETUP	
47	→		RRC CONNECTION SETUP COMPLETE	
48	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
49		←	AUTHENTICATION REQUEST	CKSN = initial CKSN.
50	→		AUTHENTICATION RESPONSE	
50a		←	SECURITY MODE COMMAND	
50b	→		SECURITY MODE COMPLETE	
51		←	LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
52	→		TMSI REALLOCATION COMPLETE	
53		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
54	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
55	SS			Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note).
56	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
57		←	RRC CONNECTION SETUP	
58	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
59	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
60	←		AUTHENTICATION REQUEST	
61	→		AUTHENTICATION RESPONSE	Steps 60 and 61 are performed N times. N shall be chosen in such a way that T3210 expires.
62	UE			The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
63	UE			If the UE supports speech it is made to perform an emergency call.
64	→		RRC CONNECTION REQUEST	Establishment cause: Emergency call.
65	←		RRC CONNECTION SETUP	
66	→		RRC CONNECTION SETUP COMPLETE	
67	→		CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.
68	←		CM SERVICE ACCEPT	
69	→		EMERGENCY SETUP	
70	←		RELEASE COMPLETE	Cause = unassigned number.
71	←		RRC CONNECTION RELEASE	
72	→		RRC CONNECTION RELEASE COMPLETE	
72a	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
73	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
74	←		RRC CONNECTION SETUP	
75	→		RRC CONNECTION SETUP COMPLETE	
76	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
77	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
78	→		AUTHENTICATION RESPONSE	
78a	←		SECURITY MODE COMMAND	
78b	→		SECURITY MODE COMPLETE	
79	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
80	→		TMSI REALLOCATION COMPLETE	
81	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell B.
82	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
83		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
84	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
85	←		RRC CONNECTION SETUP	
86	→		RRC CONNECTION SETUP COMPLETE	
87	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
88		SS		performs step 14.
88a			(void)	
88b	→		CELL UPDATE	CCCH.
88c	←		RRC CONNECTION RELEASE	CCCH.
88d		SS		performs step 15c.
89	UE			A MO CM connection is attempted before T3211 expiry.
90	→		RRC CONNECTION REQUEST	Establishment cause: Registration.

Step	Direction		Message	Comments
	UE	**SS**		
91	←		RRC CONNECTION SETUP	
92	→		RRC CONNECTION SETUP COMPLETE	
93	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
94	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
95	→		TMSI REALLOCATION COMPLETE	
96	←		RRC CONNECTION RELEASE	Steps 98 to 103 are optional as the UE may have memorized the request for CM connection attempt.
97	→		RRC CONNECTION RELEASE COMPLETE	
97a		SS		Wait 10 s to decide whether to go directly to step 104.
98	→		RRC CONNECTION REQUEST	Establishment cause: Not checked.
99	←		RRC CONNECTION SETUP	
100	→		RRC CONNECTION SETUP COMPLETE	
101	→		CM SERVICE REQUEST	CKSN = no key available, Mobile identity = TMSI.
102	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle updated" in cell A.
103	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
104		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note).
105	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
106	←		RRC CONNECTION SETUP	
107	→		RRC CONNECTION SETUP COMPLETE	
108	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
109		SS		performs step 14.
109a			(void)	
109b	→		CELL UPDATE	CCCH.
109c	←		RRC CONNECTION RELEASE	CCCH.
109d		SS		performs step 15c.
The following messages are sent and shall be received on cell A.				
110		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
110a	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
110b	←		RRC CONNECTION SETUP	
110c	→		RRC CONNECTION SETUP COMPLETE	
110d	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
110e		SS		performs step 14.
110f	→		CELL UPDATE	CCCH.
110g	←		RRC CONNECTION RELEASE	CCCH.
110h		SS		performs step 15c.
111	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" = IMSI. Establishment Cause: Terminating Conversation Call.
112	→		PAGING RESPONSE	"Mobile identity" = IMSI, CKSN = no key available.
113	←		RRC CONNECTION RELEASE	
114	→		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
NOTE:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.3.2.5 Test requirement

1) At step 13 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key available" and the Location Updating Type IE set to "normal location updating".

2)

2.1 At step 40 the UE shall not answer to paging with the previously allocated TMSI.

2.2 At step 43 the UE shall not perform the IMSI detach procedure.

3) At step 67 the UE shall send a CM SERVICE REQUEST message with CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.

At step 69 the UE shall send an EMERGENCY SETUP message.

4) At step 93 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

5) At step 112 the UE shall send a PAGING RESPONSE message with CKSN IE set to "no key available" and Mobile Identity IE set to its IMSI.

6) At step 110d the UE shall perform a normal location updating procedure.

9.4.3.3 Location updating / abnormal cases / attempt counter equal to 4

9.4.3.3.1 Definition

9.4.3.3.2 Conformance requirement

1) When four failures such as cases d) to h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall:

1.1 perform location updating after T3212 expiry by sending a LOCATION UPATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type set to "normal location updating";

1.2 if the T3212 initiated location updating was unsuccessful, then after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

2) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE shall not perform the IMSI detach procedure, when switchd off.

3) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure the UE, if it supports speech, shall be able to perform an emergency call i.e. the UE is able to send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI and then send an EMERGENCY SETUP message.

4) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:

   4.1 the UE shall use a request from CM entity for MM connection for a service other than emergency call as a trigger for a normal location updating procedure and shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating";

   4.2 after a location updating triggered by a request from the CM layer which was .unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal location updating".

5) When four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a normal location updating procedure:

   5.1 the UE shall perform a normal location updating procedure if it enters a new cell;

   5.2 if this location updating is unsuccessful, after T3211 expiry the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

References

TS 24.008 clause 4.4.4.9.

9.4.3.3.3 Test purpose

To verify that the UE performs normal location updating procedures after T3212 expiry, when its attempt counter has reached value 4 and that the UE reset its attempt counter after a timer T3212 expiry.

To verify that the UE still follows the MM IDLE state and ATTEMPTING TO UPDATE substate requirements after its attempt counter has reached value 4.

To verify that the attempt counter is reset in the cases where it has to be done.

9.4.3.3.4 Method of test

Initial conditions

- System Simulator:

  - two cells: A and B, belonging to different location areas a and b;

  - IMSI attach/detach is allowed in both cells;

  - T3212 is set to 6 minutes.

- User Equipment:

  - the UE is "Idle updated" on cell B with a valid CKSN and a TMSI.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test Procedure

The UE is made to perform a normal location updating. The SS triggers a failure in this procedure by modifying scrambing code of DL DPCH. After T3211 expiry the UE will try again the location updating procedure. The SS triggers again a failure by modifying it. This is done again 2 times. At this point the attempt counter shall be equal to 4. It is then checked that T3212 has been started and that at its expiry the UE will try a normal location updating procedure. It is verified that the UE has reset its attempt counter after timer T3212 expiry.

Then it is checked that, when the attempt counter has reached the value of 4, the UE is in the MM IDLE state and ATTEMPTING TO UPDATE substate, that is:

- not perform an IMSI detach procedure;

- support request for emergency call;

- use requests from CM layer other than emergency call as triggering of a normal location updating procedure;

- perform normal location updating procedure when a new cell is entered.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
The following messages are sent and shall be received on cell A.				
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
2	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6	←		LOCATION UPDATING REJECT	IE Reject cause is set to #22 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
7	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
10	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
14		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
15			(void)	
15a	→		CELL UPDATE	CCCH.
15b	←		RRC CONNECTION RELEASE	CCCH.
15c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
15d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
16	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
17	←		RRC CONNECTION SETUP	
18	→		RRC CONNECTION SETUP COMPLETE	
19	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
20	←		AUTHENTICATION REQUEST	
21	→		AUTHENTICATION RESPONSE	Steps 20 and 21 are performed N times. N shall be chosen in such a way that T3210 expires.
22		UE		The UE shall cease transmission and then shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the expiry of T3210.
23	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
24	←		RRC CONNECTION SETUP	
25	→		RRC CONNECTION SETUP COMPLETE	
26	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
27	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.

Step	Direction		Message	Comments
	UE	**SS**		
28	→		RRC CONNECTION RELEASE COMPLETE	
29	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3212 (tolerance -15s; 45s) at least after the RRC connection is released.
30	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
31	←		RRC CONNECTION SETUP	
32	→		RRC CONNECTION SETUP COMPLETE	
33	→		LOCATION UPDATING REQUEST	location updating type: "normal location update" CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
34	←		LOCATION UPDATING REJECT	IE Reject cause = #17 "network failure".
35	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
36	→		RRC CONNECTION RELEASE COMPLETE	
37	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
38	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
39	←		RRC CONNECTION SETUP	
40	→		RRC CONNECTION SETUP COMPLETE	
41	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
42	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
43	→		AUTHENTICATION RESPONSE	
43a	←		SECURITY MODE COMMAND	
43b	→		SECURITY MODE COMPLETE	
44	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
45	→		TMSI REALLOCATION COMPLETE	
46	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
47	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
48	SS			Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note).
49	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
50	←		RRC CONNECTION SETUP	
51	→		RRC CONNECTION SETUP COMPLETE	
52	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
53	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
54	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
55	→		RRC CONNECTION RELEASE COMPLETE	
56	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
57	→		RRC CONNECTION REQUEST	Establishment cause: Registration.

Step	Direction		Message	Comments
	UE	**SS**		
58	←		RRC CONNECTION SETUP	
59	→		RRC CONNECTION SETUP COMPLETE	
60	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
61		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
61a			(void)	
61b	→		CELL UPDATE	CCCH.
61c	←		RRC CONNECTION RELEASE	CCCH.
61d		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
61e		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
62	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
63	←		RRC CONNECTION SETUP	
64	→		RRC CONNECTION SETUP COMPLETE	
65	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
66	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
67	→		RRC CONNECTION RELEASE COMPLETE	
68		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
69	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
70	←		RRC CONNECTION SETUP	
71	→		RRC CONNECTION SETUP COMPLETE	
72	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
73		SS		performs step 53 and 54.
74		UE		performs step 55. If the UE supports speech, it is made to perform an emergency call.
75	→		RRC CONNECTION REQUEST	Establishment cause: Emergency call.
76	←		RRC CONNECTION SETUP	
77	→		RRC CONNECTION SETUP COMPLETE	
78	→		CM SERVICE REQUEST	CM service type = Emergency call establishment; CKSN = no key available; Mobile Identity = IMSI.
79	←		CM SERVICE ACCEPT	
80	→		EMERGENCY SETUP	
81	←		RELEASE COMPLETE	Cause = unassigned number.
82	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
83	→		RRC CONNECTION RELEASE COMPLETE	
84		UE		If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
85		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 30 s.
86		UE		Depending on what has been performed in step 84 the UE is brought back to operation.

Step	Direction		Message	Comments
	UE	**SS**		
87	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
88	←		RRC CONNECTION SETUP	
89	→		RRC CONNECTION SETUP COMPLETE	
90	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
91	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
92	→		AUTHENTICATION RESPONSE	
92a	←		SECURITY MODE COMMAND	
92b	→		SECURITY MODE COMPLETE	
93	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
94	→		TMSI REALLOCATION COMPLETE	
95	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell B.
96	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
97		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
98	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
99	←		RRC CONNECTION SETUP	
100	→		RRC CONNECTION SETUP COMPLETE	
101	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
102	←		LOCATION UPDATING REJECT	IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
103	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
104	→		RRC CONNECTION RELEASE COMPLETE	
105	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
106	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
107	←		RRC CONNECTION SETUP	
108	→		RRC CONNECTION SETUP COMPLETE	
109	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
110		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
111			(void)	
111a	→		CELL UPDATE	CCCH.
111b	←		RRC CONNECTION RELEASE	CCCH.
111c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
111d	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
112	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
113	←		RRC CONNECTION SETUP	
114	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
115	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
116	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
117	→		RRC CONNECTION RELEASE COMPLETE	
118	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
119	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
120	←		RRC CONNECTION SETUP	
121	→		RRC CONNECTION SETUP COMPLETE	
122	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
123			(void)	
123a	UE			performs step 61a.
123b	→		CELL UPDATE	CCCH.
123c	←		RRC CONNECTION RELEASE	CCCH.
123d		SS		performs step 61d.
124	UE			A MO CM connection is attempted before T3212 expiry.
125	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
126	←		RRC CONNECTION SETUP	
127	→		RRC CONNECTION SETUP COMPLETE	
128	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
129			(void)	
129a	UE			performs step 61a.
129b	→		CELL UPDATE	CCCH.
129c	←		RRC CONNECTION RELEASE	CCCH.
129d		SS		performs step 61d.
130	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
131	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
132	←		RRC CONNECTION SETUP	
133	→		RRC CONNECTION SETUP COMPLETE	
134	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
135	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
136	→		AUTHENTICATION RESPONSE	
136a	←		SECURITY MODE COMMAND	
136b	→		SECURITY MODE COMPLETE	
137	←		LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
138	→		TMSI REALLOCATION COMPLETE	
139	←		RRC CONNECTION RELEASE	
140	→		RRC CONNECTION RELEASE COMPLETE	UE is now "idle, updated" in cell A. The UE may or may not have memorised the request for CM connection. The steps 141 to 147 are therefore optional for the UE. The SS waits 10 s whether to decide to go directly to step 148.
141	→		RRC CONNECTION REQUEST	
142	←		RRC CONNECTION SETUP	

Step	Direction		Message	Comments
	UE	SS		
143	→		RRC CONNECTION SETUP COMPLETE	
144	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI.
145	←		CM SERVICE REJECT	cause #17 (network failure).
146	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
147	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell B.				
148		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note).
149	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
150	←		RRC CONNECTION SETUP	
151	→		RRC CONNECTION SETUP COMPLETE	
152	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = initial value, LAI = a, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
153	←		LOCATION UPDATING REJECT	IE Reject cause is set to #38 in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
154	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link
155	→		RRC CONNECTION RELEASE COMPLETE	
156		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
157	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
158	←		RRC CONNECTION SETUP	
159	→		RRC CONNECTION SETUP COMPLETE	
160	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
161		SS		The SS modifies the scrambling code of DL DPCH for generating lower layer failure.
162			(void)	
162a	→		CELL UPDATE	CCCH.
162b	←		RRC CONNECTION RELEASE	CCCH.
162c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
162d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
163	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
164	←		RRC CONNECTION SETUP	
165	→		RRC CONNECTION SETUP COMPLETE	
166	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
167	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
168	→		RRC CONNECTION RELEASE COMPLETE	
169		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
170	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
171	←		RRC CONNECTION SETUP	
172	→		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
173	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
174		←	LOCATION UPDATING REJECT	IE Reject cause = "retry upon entry into a new cell".
174a		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
174b	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
175		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note).
176	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
177		←	RRC CONNECTION SETUP	
178	→		RRC CONNECTION SETUP COMPLETE	
179	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available , LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
180		SS		performs the step 61.
181			(void)	
181a	→		CELL UPDATE	CCCH.
181b		←	RRC CONNECTION RELEASE	CCCH.
181c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
181d		UE		The UE shall not initiate an RRC connection establishment on cell A or on cell B during T3211 seconds at least after the RRC connection is released.
182	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
183		←	RRC CONNECTION SETUP	
184	→		RRC CONNECTION SETUP COMPLETE	
185	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE), Mobile Identity = IMSI.
186		←	AUTHENTICATION REQUEST	CKSN = initial CKSN.
187	→		AUTHENTICATION RESPONSE	
187a		←	SECURITY MODE COMMAND	
187b	→		SECURITY MODE COMPLETE	
188		←	LOCATION UPDATING ACCEPT	IE mobile Identity = new TMSI.
189	→		TMSI REALLOCATION COMPLETE	
190		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link. UE is now "idle, updated" in cell A.
191	→		RRC CONNECTION RELEASE COMPLETE	
NOTE: The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

9.4.3.3.5 Test requirement

1) 1.1 At step 33 the UE shall perform location updating procedure.

1.2 At step 41 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

2) At step 85 the UE shall not perform the IMSI detach procedure.

3) At step78 the UE shall send a CM SERVICE REQUEST message with the CM Service Type IE set to "emergency call establishment", CKSN IE set to "no key is available" and Mobile Identity IE set to its IMSI.

At step 80 the UE shall send an EMERGENCY SETUP message.

4)

4.1 At step128 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating";

4.2 At step 134 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

5)

5.1 At step 179 the UE shall perform a normal location updating procedure if it enters a new cell;

5.2 At step 185 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type IE set to "normal location updating".

9.4.3.4 Location updating / abnormal cases / attempt counter less or equal to 4, stored LAI equal to broadcast LAI

9.4.3.4.1 Definition

9.4.3.4.2 Conformance requirement

1) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a periodic location updating procedure (the broadcast LAI is equal to the stored LAI):

1.1 the UE shall be able to establish an MM connection i.e. send a RRC CONNECTION REQUEST message and then a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

1.2 then the UE shall not attempt a location updating procedure.

2) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during an IMSI attach procedure (the broadcast LAI is equal to the stored LAI):

2.1 the UE shall be able to establish an MM connection i.e. send a RRC CONNECTION REQUEST message and then a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

2.2 then the UE shall not attempt a location updating procedure.

3) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during a periodic location updating procedure and the attempt counter is smaller than 4 the UE shall send, after T3211 expiry, a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "periodic updating".

3.1 When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a periodic location updating procedure) after T3212 expiry it shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".

4) When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during a periodic location updating procedure) it shall use a request for a CM connection other than emergency call as a trigger for a location updating procedure.

5) When a failure such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 has occurred during an IMSI attach procedure and the attempt counter is smaller than 4 the UE shall send, after T3211 expiry, a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating type set to "IMSI attach".

   5.1 When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during an IMSI attach procedure) after T3212 expiry it shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "normal".

6) When the UE's attempt counter reaches the value 4 (four failures such as cases d), f), g) and h) of clause 4.4.4.9 of TS 24.008 have occurred during an IMSI attach procedure) it shall use a request for a CM connection other than emergency call as a trigger for a location updating procedure.

References

TS 24.008 clause 4.4.4.9.

9.4.3.4.3   Test purpose

To verify that in the case when the attempt counter is smaller than 4 and the broadcast LAI is equal to the stored LAI, the UE is in the MM IDLE state and NORMAL SERVICE substate. To verify that timer T3211 is stopped after a MM connection establishment.

To verify that the UE uses the T3211 timer. and that it enters the MM IDLE state and NORMAL SERVICE substate when its attempt counter reaches value 4 even in the case where the stored LAI is equal to the broadcast LAI.

9.4.3.4.4   Method of test

Initial conditions

- System Simulator:

   - one cell: B, belonging to location area b;

   - IMSI attach/detach is allowed;

   - T3212 is set to 6 minutes.

- User Equipment:

   - the UE is "Idle updated" on cell B with a valid CKSN and a TMSI.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Test Procedure

A failure during the periodic location updating is triggered: as the broadcast LAI is equal to the stored LAI, the UE is still in the MM IDLE state and NORMAL SERVICE substate and timer T3211 is started. A CM connection other than for emergency call is attempted. It is checked that this is possible and that T3211 is stopped. Same test is performed with a failure during an IMSI attach procedure.

Then failures are triggered during the periodic location updating to let the attempt counter to reach the value of 4. The UE shall enter the MM IDLE state and ATTEMPTING TO UPDATE substate and delete any TMSI, stored LAI, ciphering key sequence number and ciphering key. When the attempt counter reaches the value of 4, timer T3212 shall be started. At timer T3212 expiry a location updating procedure is started. A request for CM connection other for than emergency call shall trigger a location updating procedure.

Same tests are performed when the failures are triggered during an IMSI attach procedure.

Expected sequence

Step	Direction UE	Direction SS	Message	Comments
1		SS		The SS shall wait at most T3212 + 45 s.
2	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
6		SS		performs step 6, of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
6a	UE			performs step 8 of 9.4.3.2.
7	UE			A MO CM connection is attempted before T3211 expiry.
8	→		RRC CONNECTION REQUEST	
9	←		RRC CONNECTION SETUP	
10	→		RRC CONNECTION SETUP COMPLETE	
11	→		CM SERVICE REQUEST	CKSN = initial CKSN, Mobile Identity = TMSI.
12	←		CM SERVICE ACCEPT	
13	→		An initial CM message	
14	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	
16		SS		The UE shall not initiate an RRC connection establishment. This is checked during T3211.
17	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
Steps 18 to 23 are optional.				
18	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		IMSI DETACH INDICATION	
22	←		RRC CONNECTION RELEASE	
23	→		RRC CONNECTION RELEASE COMPLETE	
24	UE			Depending on what has been performed in step 17 the UE is brought back to operation.
25	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
29		SS		performs step 14 of 9.4.3.2.
29a			(void)	
29b	→		CELL UPDATE	CCCH.
29c	←		RRC CONNECTION RELEASE	CCCH.
29d		SS		performs step 15c of 9.4.3.2.
30	UE			A MO CM connection is attempted before T3211 expiry.
31	→		RRC CONNECTION REQUEST	
32	←		RRC CONNECTION SETUP	

Step	Direction UE	Direction SS	Message	Comments
33	→		RRC CONNECTION SETUP COMPLETE	
34	→		CM SERVICE REQUEST	CKSN = initial CKSN, Mobile Identity = TMSI.
35		←	SECURITY MODE COMMAND	
36	→		SECURITY MODE COMPLETE	
37	→		An initial CM message	
38		←	RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
40	SS			The UE shall not initiate an RRC connection establishment. This is checked during T3211 UE is "idle, updated" in cell B.
40/1	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
Steps 40/2 to 40/7 are optional.				
40/2	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
40/3		←	RRC CONNECTION SETUP	
40/4	→		RRC CONNECTION SETUP COMPLETE	
40/5	→		IMSI DETACH INDICATION	
40/6		←	RRC CONNECTION RELEASE	
40/7	→		RRC CONNECTION RELEASE COMPLETE	
40/8	UE			Depending on what has been performed in step 40/1, the UE is brought back to operation.
40/9	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
40/10		←	RRC CONNECTION SETUP	
40/11	→		RRC CONNECTION SETUP COMPLETE	
40/12	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
40/13		←	LOCATION UPDATING ACCEPT	without mobile identity
40/14		←	RRC CONNECTION RELEASE	
40/15	→		RRC CONNECTION RELEASE COMPLETE	
41	SS			The SS shall wait at most T3212 + 15 s.
42	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
43		←	RRC CONNECTION SETUP	
44	→		RRC CONNECTION SETUP COMPLETE	
45	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
46	SS			performs step 14 of 9.4.3.2.
46a			(void)	
46b	→		CELL UPDATE	CCCH.
46c		←	RRC CONNECTION RELEASE	CCCH.
46d	SS			performs step 15c of 9.4.3.2.
47	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
48	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
49		←	RRC CONNECTION SETUP	
50	→		RRC CONNECTION SETUP COMPLETE	
51	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
52	SS			performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
52a	UE			performs step 8 of 9.4.3.2.

Step	Direction		Message	Comments
	UE	SS		
53	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
54	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
55	←		RRC CONNECTION SETUP	
56	→		RRC CONNECTION SETUP COMPLETE	
57	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
58	SS			performs step 14 of 9.4.3.2.
59			(void)	
59a	→		CELL UPDATE	CCCH.
59b	←		RRC CONNECTION RELEASE	CCCH.
59c	SS			The SS re-modifies the scrambling code of DL DPCH to the original one.
59d	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
60	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
61	←		RRC CONNECTION SETUP	
62	→		RRC CONNECTION SETUP COMPLETE	
63	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
64	SS			performs step 14 of 9.4.3.2.
64a			(void)	
64b	→		CELL UPDATE	CCCH.
64c	←		RRC CONNECTION RELEASE	CCCH.
64d	SS			performs step 15c of 9.4.3.2.
65	UE			The UE shall not initiate an RRC connection establishment during T3212 seconds at least after the RRC connection is released.
66	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
67	←		RRC CONNECTION SETUP	
68	→		RRC CONNECTION SETUP COMPLETE	
69	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
70	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
71	→		AUTHENTICATION RESPONSE	
71a	←		SECURITY MODE COMMAND	
71b	→		SECURITY MODE COMPLETE	
72			(void)	
72a	←		LOCATION UPDATING ACCEPT	IE mobile Identity = TMSI.
72b	→		TMSI REALLOCATION COMPLETE	
73	←		RRC CONNECTION RELEASE	The SS waits for the disconnection of the main signalling link.
74	→		RRC CONNECTION RELEASE COMPLETE	
75	UE			The UE shall not initiate an RRC connection establishment during than T3212 seconds at least after the RRC connection is released.
76	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
77	←		RRC CONNECTION SETUP	
78	→		RRC CONNECTION SETUP COMPLETE	
79	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.

Step	Direction		Message	Comments
	UE	**SS**		
80		SS		performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
80a	UE			performs step 8 of 9.4.3.2.
81	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
82	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
83	←		RRC CONNECTION SETUP	
84	→		RRC CONNECTION SETUP COMPLETE	
85	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
86		SS		performs step 14 of 9.4.3.2.
87			(void)	
87a	→		CELL UPDATE	CCCH.
87b	←		RRC CONNECTION RELEASE	CCCH.
87c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
87d	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
88	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
89	←		RRC CONNECTION SETUP	
90	→		RRC CONNECTION SETUP COMPLETE	
91	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
92		SS		performs step 14 of 9.4.3.2.
92a			(void)	
92b	→		CELL UPDATE	CCCH.
92c	←		RRC CONNECTION RELEASE	CCCH.
92d		SS		performs step 15c of 9.4.3.2.
93	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
94	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
95	←		RRC CONNECTION SETUP	
96	→		RRC CONNECTION SETUP COMPLETE	
97	→		LOCATION UPDATING REQUEST	location updating type = periodic, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
98		SS		performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
98a	UE			performs step 8 of 9.4.3.2.
99	UE			A MO CM connection is attempted before T3212 expiry.
100	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
101	←		RRC CONNECTION SETUP	
102	→		RRC CONNECTION SETUP COMPLETE	
103	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
104	←		LOCATION UPDATING ACCEPT	IE mobile identity = TMSI.
105	→		TMSI REALLOCATION COMPLETE	
106	←		RRC CONNECTION RELEASE	
107	→		RRC CONNECTION RELEASE COMPLETE	
Steps 108 to 114 are optional. Wait 10 s to decide whether to go directly to step 115.				

Step	Direction UE	SS	Message	Comments
108	→		RRC CONNECTION REQUEST	
109	←		RRC CONNECTION SETUP	
110	→		RRC CONNECTION SETUP COMPLETE	
111	→		CM SERVICE REQUEST	CKSN = no key available, Mobile identity = TMSI
112	←		CM SERVICE REJECT	cause #17 (network failure).
113	←		RRC CONNECTION RELEASE	
114	→		RRC CONNECTION RELEASE COMPLETE	
115	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
Steps 116 to 121 are optional.				
116	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
117	←		RRC CONNECTION SETUP	
118	→		RRC CONNECTION SETUP COMPLETE	
119	→		IMSI DETACH INDICATION	
120	←		RRC CONNECTION RELEASE	
121	→		RRC CONNECTION RELEASE COMPLETE	
122	UE			Depending on what has been performed in step 115 the UE is brought back to operation.
123	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
124	←		RRC CONNECTION SETUP	
125	→		RRC CONNECTION SETUP COMPLETE	
126	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
127	SS			performs step 14 of 9.4.3.2.
128			(void)	
128a	→		CELL UPDATE	CCCH.
128b	←		RRC CONNECTION RELEASE	CCCH.
128c	SS			The SS re-modifies the scrambling code of DL DPCH to the original one.
128d	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
129	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
130	←		RRC CONNECTION SETUP	
131	→		RRC CONNECTION SETUP COMPLETE	
132	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
133	←		RRC CONNECTION RELEASE	After the sending of the message the SS waits for the disconnection of the main signalling link.
134	→		RRC CONNECTION RELEASE COMPLETE	
135	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
136	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
137	←		RRC CONNECTION SETUP	
138	→		RRC CONNECTION SETUP COMPLETE	
139	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
140			(void)	
140a	←		LOCATION UPDATING REJECT	IE Reject cause is set to #X in table 10.5.95 of TS 24.008, causes #2, #3, #6, #11, #12, #13 and #15 being excluded.
140b	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.

Step	Direction		Message	Comments
	UE	SS		
141	→		RRC CONNECTION RELEASE COMPLETE	
142	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
143	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
144	←		RRC CONNECTION SETUP	
145	→		RRC CONNECTION SETUP COMPLETE	
146	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = no key available, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
147		SS		performs step 14 of 9.4.3.2.
147a			(void)	
147b	→		CELL UPDATE	CCCH.
147c	←		RRC CONNECTION RELEASE	CCCH.
147d		SS		performs step 15c of 9.4.3.2.
148	UE			The UE shall not initiate an RRC connection establishment during T3212 seconds at least after the RRC connection is released.
149	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
150	←		RRC CONNECTION SETUP	
151	→		RRC CONNECTION SETUP COMPLETE	
152	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
153	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
154	→		AUTHENTICATION RESPONSE	
154a	←		SECURITY MODE COMMAND	
154b	→		SECURITY MODE COMPLETE	
155	←		LOCATION UPDATING ACCEPT	IE mobile Identity = TMSI.
156	→		TMSI REALLOCATION COMPLETE	
157	←		RRC CONNECTION RELEASE	
158	→		RRC CONNECTION RELEASE COMPLETE	
159	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
Steps 160 to 165 are optional.				
160	→		RRC CONNECTION REQUEST	Establishment Cause: Detach
161	←		RRC CONNECTION SETUP	
162	→		RRC CONNECTION SETUP COMPLETE	
163	→		IMSI DETACH INDICATION	
164	←		RRC CONNECTION RELEASE	
165	→		RRC CONNECTION RELEASE COMPLETE	
166	UE			Depending on what has been performed in step 159 the UE is brought back to operation.
167	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
168	←		RRC CONNECTION SETUP	
169	→		RRC CONNECTION SETUP COMPLETE	
170	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
171		SS		performs step 14 of 9.4.3.2.
171a			(void)	
171b	→		CELL UPDATE	CCCH.
171c	←		RRC CONNECTION RELEASE	CCCH.
171d		SS		performs step 15c of 9.4.3.2.

Step	Direction		Message	Comments
	UE	SS		
172	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
173	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
174	←		RRC CONNECTION SETUP	
175	→		RRC CONNECTION SETUP COMPLETE	
176	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
177		SS		performs step 6 of 9.4.3.2 with cause #17 and step 7 of 9.4.3.2.
177a	UE			performs step 8 of 9.4.3.2.
178	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
179	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
180	←		RRC CONNECTION SETUP	
181	→		RRC CONNECTION SETUP COMPLETE	
182	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
183		SS		performs step 14 of 9.4.3.2.
184			(void)	
184a	→		CELL UPDATE	CCCH.
184b	←		RRC CONNECTION RELEASE	CCCH.
184c		SS		The SS re-modifies the scrambling code of DL DPCH to the original one.
184d	UE			The UE shall not initiate an RRC connection establishment during T3211 at least after the RRC connection is released.
185	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
186	←		RRC CONNECTION SETUP	
187	→		RRC CONNECTION SETUP COMPLETE	
188	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach, CKSN = initial value, LAI = b, mobile station classmark 1 as given by the ICS and mobile identity = TMSI.
189		SS		performs step 14 of 9.4.3.2.
189a			(void)	
189b	→		CELL UPDATE	CCCH.
189c	←		RRC CONNECTION RELEASE	CCCH.
189d		SS		performs step 15c of 9.4.3.2.
190	UE			A MO CM connection id attempted before T3212 expiry
191	→		RRC CONNECTION REQUEST	Establishment cause: Registration.
192	←		RRC CONNECTION SETUP	
193	→		RRC CONNECTION SETUP COMPLETE	
194	→		LOCATION UPDATING REQUEST	location updating type = normal, CKSN = no key available, LAI = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE) mobile station classmark 1 as given by the ICS and mobile identity = IMSI.
195	←		AUTHENTICATION REQUEST	CKSN = initial CKSN.
196	→		AUTHENTICATION RESPONSE	
196a	←		SECURITY MODE COMMAND	
196b	→		SECURITY MODE COMPLETE	
197	←		LOCATION UPDATING ACCEPT	IE mobile Identity = TMSI.
198	→		TMSI REALLOCATION COMPLETE	
199	←		RRC CONNECTION RELEASE	
200	→		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
Steps 202 to 208 are optional.				
201			(void)	
202	→		RRC CONNECTION REQUEST	
203		←	RRC CONNECTION SETUP	
204	→		RRC CONNECTION SETUP COMPLETE	
205	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI.
206		←	CM SERVICE REJECT	cause #17 (network failure).
207		←	RRC CONNECTION RELEASE	
208	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.4.3.4.5 Test requirement

1)

  1.1 At step 8 the UE shall send a RRC CONNECTION REQUEST message and at step 11 the UE shall send a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

  1.2 At step 11 the UE shall not attempt a location updating procedure.

2)

  2.1 At step 31 the UE shall send a RRC CONNECTION REQUEST message and at step 34 the UE shall send a CM SERVICE REQUEST message, CKSN and LAI set to those which have been allocated to the UE, Mobile Identity IE set to the TMSI which has been allocated to the UE;

  2.2 At step 39 the UE shall not attempt a location updating procedure.

3) At step 51 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "periodic updating".

  3.1 At step 69 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".

4) At step 103 the UE shall send a LOCATION UPDATING REQUEST message.

5) At step 132 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to the TMSI which has been allocated to the UE, CKSN IE and LAI set to those which have been allocated to the UE and the Location Updating Type IE set to "IMSI attach".

  5.1 At step 152 the UE shall send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating Type IE set to "normal".

6) At step 194 the UE shall send a LOCATION UPDATING REQUEST message.

9.4.4 Location updating / release / expiry of T3240

9.4.4.1 Definition

9.4.4.2 Conformance requirement

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

References

TS 24.008 clauses 4.4.4.8 and 11.2.

9.4.4.3 Test purpose

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

9.4.4.4 Method of test

Initial conditions

- System Simulator:

    - two cells: A and B, belonging to different location areas a and b.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated" on cell A.

Related ICS/IXIT statements

None.

Test Procedure

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

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note 1)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	
6	←		LOCATION UPDATING ACCEPT	
7		SS		The SS waits T3240 expiry.
8	→		SIGNALLING CONNECTION RELEASE REQUEST	The UE shall abort the RRC connection. (see note 2)
9	←		RRC CONNECTION RELEASE	SS disconnect the connection established.
10	→		RRC CONNECTION RELEASE COMPLETE	Send only if RRC Connection Release is send.
NOTE1:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			
NOTE2:	At the expiration of T3240, as per TS 24.008, RR connection shall be aborted. In UMTS, UE cannot release RRC connection on its own. Instead, UE can send a Signalling Connection Release Request to the UTRAN, in order to initiate the release of RRC connection.			

Specific message contents

None.

9.4.4.5 Test requirement

At step 10 the UE shall abort the RRC connection.

9.4.5 Location updating / periodic

9.4.5.1 Location updating / periodic spread

9.4.5.1.1 Definition

9.4.5.1.2 Conformance requirement

1) The UEs shall perform spreading of the time before performing a periodic location updating when the location updating timer value is reduced.

2) The UE shall reset timer T3212 when the UE is deactivated, and shall start with a value between zero and the broadcasted value when reactivated in the same cell, IMSI attach being forbidden.

3) When activated the UE shall start timer T3212 with a value randomly drawn in the allowed range.

NOTE: This conformance requirement is not covered by a test purpose. It is intended to be covered by a manufacturer declaration.

References

TS 24.008 clause 4.4.2.

9.4.5.1.3 Test purpose

1) To check that when the location updating timer is reduced, the timer running in the UE is started with a value depending on the current timer value and the new broadcasted T3212 value.

2) To verify that when the UE is reactivated in the same cell (as the one in which it was deactivated), IMSI attach being forbidden, the UE starts the timer T3212 with a value between zero and the broadcasted value.

NOTE: It is not tested that the value is random.

9.4.5.1.4 Method of test

Initial conditions

- System Simulator:

    - one cell, T3212 is set to 30 minutes;

    - IMSI attach is allowed in the cell;

- User Equipment:

    - the UE is deactivated. The stored MCC, MNC and LAC correspond to the broadcasted values. The stored update status is "updated".

Related ICS/IXIT statements

None.

Test procedure

The UE is activated. It performs IMSI attach. 3 minutes after the end of the IMSI attach procedure, the value of T3212 is set to 6 minutes. The UE shall perform periodic location updating 6 minutes after the end of the IMSI attach procedure.

Then, the IMSI attach/detach is forbidden. T3212 is still set to 6 minutes.

The UE is deactivated. The UE is reactivated. It is checked that the UE performs a periodic location updating during the 6 minutes following activation.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type": IMSI attach.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		3 minutes after step 8 the value of T3212 is set to 6 minutes.
10	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall be sent by the UE between 5 minutes 45 s and 6 minutes 15 s after step 8.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	"location updating type": periodic updating.
14	←		LOCATION UPDATING ACCEPT	
15	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
16	→		RRC CONNECTION RELEASE COMPLETE	
17		SS		IMSI attach/detach is not allowed.
18	UE			The UE is deactivated.
19	UE			The UE is activated.
20		SS		The SS waits until the periodic location updating.
21	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive during the 6 minutes following the UE activation.
22	←		RRC CONNECTION SETUP	
23	→		RRC CONNECTION SETUP COMPLETE	
24	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
25	←		LOCATION UPDATING ACCEPT	
26	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
27	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.4.5.1.5 Test requirement

At step 10 the UE shall send an RRC CONNECTION REQUEST for a periodic location updating.

At step 21 the UE shall send an RRC CONNECTION REQUEST for a periodic location updating.

9.4.5.2 Location updating / periodic normal / test 1

9.4.5.2.1 Definition

9.4.5.2.2 Conformance requirement

1 The UE shall stop and reset the timer T3212 of the periodic location updating procedure when the first MM message is received or SECURITY mode setting is completed in the case of MM connection establishment.

2 The UE shall stop and reset the timer T3212 of the periodic location updating procedure when the UE has responded to paging and thereafter has received the first correct L3 message that is not an RRC message.

References

TS 24.008 clause 4.4.2.

9.4.5.2.3 Test purpose

To verify that the UE stops and resets the timer T3212 of the periodic location updating procedure when:

- the first MM-message is received in the case of MM-connection establishment, security mode being not set;

- the UE has responded to paging and the first correct L3 message that is not an RRC message is received.

NOTE: T3212 is stopped when the MM-idle state is left and restarted when the MM sublayer returns to that state, substate NORMAL SERVICE or ATTEMPTING TO UPDATE. As a consequence, the exact time when T3212 is reset between those two events cannot be tested.

9.4.5.2.4 Method of test

Initial conditions

- System Simulator:

  - 1 cell, default parameters;

  - IMSI attach/detach is not allowed;

  - the T3212 time-out value is 2/10 hour.

- User Equipment:

  - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test procedure

An UE originated MM connection is established and cleared. The RRC CONNECTION is released. It is checked that the UE performs a periodic location updating 12 minutes after the release of the RRC CONNECTION.

One minute after the periodic location updating, the UE is paged, it sends a RRC CONNECTION REQUEST message and the SS responds with an RRC CONNECTION SETUP message, a call is established and then cleared. It is checked that the UE performs a periodic location updating 12 minutes after the release of the link.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE REJECT	cause #17 (network failure).
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The SS waits until the periodic location updating.
10	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive between 11 minutes 45 s and 12 minutes 15 s after the last release of the RRC connection by the SS.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
14	←		LOCATION UPDATING ACCEPT	
15	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
16	→		RRC CONNECTION RELEASE COMPLETE	
17		SS		The SS waits 1 minute.
18	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Mobile identity" = IMSI. "Establishment cause": Terminating Conversational Call.
19	→		PAGING RESPONSE	
20	←		AUTHENTICATION REQUEST	
21	→		AUTHENTICATION RESPONSE	
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24		SS		The SS waits until the periodic location updating.
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive between 11 minutes 45 s and 12 minutes 15 s after the last release of the RRC connection by the SS.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
29	←		LOCATION UPDATING ACCEPT	
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.4.5.2.5 Test requirement

At step 10 the UE shall initiate an RRC CONNECTION REQUEST 12 minutes after the release of the RRC CONNECTION (at step 7).

At step 25 the UE shall initiate an RRC CONNECTION REQUEST 12 minutes after the release of the RRC CONNECTION (at step 22).

9.4.5.3 Location updating / periodic normal / test 2

9.4.5.3.1 Definition

9.4.5.3.2 Conformance requirement

When a LOCATION UPDATING ACCEPT or a LOCATION UPDATING REJECT message is received, the timer T3212 is stopped and reset and the UE shall perform a periodic location updating after T3212 expiry.

References

TS 24.008 clause 4.4.2.

9.4.5.3.3 Test purpose

To verify that the UE stops and resets the timer T3212 of the periodic location updating procedure when a LOCATION UPDATING ACCEPT message is received.

NOTE: T3212 is stopped when the MM-idle state is left and restarted when the MM sublayer returns to that state, substate NORMAL SERVICE or ATTEMPTING TO UPDATE. As a consequence, the exact time when T3212 is reset between those two events cannot be tested.

9.4.5.3.4 Method of test

Initial conditions

- System Simulator:

    - 2 cells, IMSI attach/detach is allowed in both cells;

    - T3212 is set to 6 minutes.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated" on cell A.

Related ICS/IXIT statements

USIM removal possible while UE is powered Yes/No.

Switch off on button yes/No.

Test procedure

A normal location updating is performed. The RRC CONNECTION is released. One minute later, the UE is deactivated, then reactivated in the same cell. It is checked that the UE performs an IMSI attach and a periodic location updating 6 minutes after the IMSI attach.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
2	→		RRC CONNECTION REQUEST	"establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The SS waits until the periodic location updating.
10	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive between 5 minutes 45s and 6 minutes 15 s after the last release of the RRC connection by the SS.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
14	←		LOCATION UPDATING ACCEPT	
15	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
16	→		RRC CONNECTION RELEASE COMPLETE	
17		UE		If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed. steps 18 to 23 may be performed or not depending on the action made in step 17.
18	→		RRC CONNECTION REQUEST	"Establishmet cause": Detach
19	←		RRC CONNECTION SETUP	
20	→		RRC CONNECTION SETUP COMPLETE	
21	→		IMSI DETACH INDICATION	
22	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
23	→		RRC CONNECTION RELEASE COMPLETE	
24		UE		Depending on what has been performed in step 17 the UE is brought back to operation.
25	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
26	←		RRC CONNECTION SETUP	
27	→		RRC CONNECTION SETUP COMPLETE	
28	→		LOCATION UPDATING REQUEST	"Location updating type" = IMSI attach.
29	←		LOCATION UPDATING ACCEPT	
30	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
31	→		RRC CONNECTION RELEASE COMPLETE	
32		SS		The SS waits until the periodic location updating.
33	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall arrive between 5 minutes 45 s and 6 minutes 15s after the last release of the RRC connection by the SS.
34	←		RRC CONNECTION SETUP	

Step	Direction		Message	Comments
	UE	SS		
35	→		RRC CONNECTION SETUP COMPLETE	
36	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
37		←	LOCATION UPDATING ACCEPT	
38		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
39	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.5.3.5   Test requirement

After step 28 the UE shall performs an IMSI attach.

After step 33 the UE shall performs periodic location updating 6 minutes after step 28.

9.4.5.4   Location updating / periodic search for HPLMN or higher priority PLMN when in VPLMN

9.4.5.4.1   Location updating / periodic search for HPLMN or higher priority PLMN / UE waits time T

9.4.5.4.1.1   Definition

9.4.5.4.1.2   Conformance requirement

1. ~~If the MS is in a VPLMN, the MS shall periodically attempt to obtain service on its HPLMN or higher priority PLMN listed in "user controlled PLMN selector" or "operator controlled PLMN selector".~~

1~~2~~. In the case that the mobile has a stored "Equivalent PLMNs" list the mobile shall only select a PLMN if it is of a higher priority than those of the same country as the current serving PLMN which are stored in the "Equivalent PLMNs" list.

2. In steps i), ii) and iii) of the Automatic Network Selection Mode Procedure, the MS shall limit its attempts to access higher priority PLMNs to PLMNs of the same country as the current serving VPLMN;

3. If the MS is in idle mode in a VPLMN, the MS shall periodically attempt to obtain service on its HPLMN or higher priority PLMN listed in "user controlled PLMN selector" or "operator controlled PLMN selector". The MS shall make an attempt if the MS is on the VPLMN at time T after the last attempt

3. ~~For this purpose, a value T minutes may be stored in the SIM, T is either in the range 6 minutes to 8 hours in 6 minute steps or it indicates that no periodic attempts shall be made. If no value is stored in the SIM, a default value of 60 minutes is used.~~

4. ~~The attempts to access the HPLMN or higher priority PLMN shall be as specified below:~~

   a) ~~The periodic attempts shall only be performed in automatic mode when the MS is roaming;~~

   b) ~~After switch on, a period of at least 2 minutes and at most T minutes shall elapse before the first attempt is made;~~

   c) ~~The MS shall make an attempt if the MS is on the VPLMN at time T after the last attempt;~~

   d) ~~Periodic attempts shall only be performed by the MS while in idle mode;~~

e) ~~If the HPLMN or higher priority PLMN is not found, the MS shall remain on the VPLMN;~~

f) ~~In steps i), ii) and iii) the MS shall limit its attempts to access higher priority PLMNs to PLMNs of the same country as the current serving VPLMN;~~

g) ~~Only the priority levels of Equivalent PLMNs of the same country as the current serving VPLMN shall be taken into account to compare with the priority level of a selected PLMN.~~

References

TS 22.011 clause 3.2.2.5. and TS 23.122 4.4.3.3.

9.4.5.4.1.3   Test purpose

To verify that ~~when a cell of a higher priority PLMN the HPLMN becomes available, following the successful location request on a VPLMN and after the first search the mobile has failed to find a higher priority PLMN, that the UE shall perform a location update request on a higher priority PLMN after time T. Were T is the Search Period stored in the USIM.~~ if a UE is camped on a VPLMN it will perform a search for higher priority networks (e.g HPLMN) with a periodicity of T, which is the Search Period stored in the USIM.

This test will confirm that, if a cell from a new PLMN becomes available, within a time T the UE will perform a location updating on it only if the following requirements are met:

-       The PLMN of this new cell if from the same country as the VPLMN, and

-       This PLMN is the HPLMN stored in the USIM, or has a higher priority than the serving VPLMN or any PLMN from the country of the VPLMN that is stored in the equivalent PLMN list.

9.4.5.4.1.4   Method of test

Initial conditions

- System Simulator:

    - four cells A, B, C and D, belonging to different location areas with location identification a, b, c and d. Their country codes and mobile network codes are defined as follows:

Cell	MCC	MNC
A	001	001
B	022	002
C	001	010
D	001	100

    Initially Cells A, B and C shall not be broadcasting. IMSI attach/detach is not allowed on any of other cells.

- User Equipment:

    - the UE is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".

    - The following USIM fields are configured:

USIM field	Priority	PLMN
EF$_{HPLMNwAcT}$	1st	A
EF$_{PLMNwAcT}$	1st	B
	2nd	E
EF$_{OPLMNwAcT}$	1st	C
	2nd	D

    In the table PLMN X is the PLMN code from cell X (see above). PLMN E is defined as MCC=001, MNC=030.

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell D shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell D. The SS shall include the PLMN E in the list of equivalent PLMNs that is sent in the Location Update Accept message. Cells B and C shall be made available after 7~~8~~ minutes from switched on, thus ensuring the UE fails to find any higher priority PLMN during its first attempt. It is verified that the UE does not perform a location update request on Cell B or C (waiting for at least 6 minutes after broadcasting of Cells B and C). Then Cell A is also made available, and it is verified that the UE performs a location update request on Cell A within 6 minutes after broadcasting of Cell A.

Expected sequence

Step	Direction		Message	Contents
	UE	**SS**		
1	SS			The following messages shall be sent and received on Cell D. Set the cell type of Cell A to the "non-suitable cell". Set the cell type of Cell B to the "non-suitable cell". Set the cell type of Cell C to the "non-suitable cell". Set the cell type of Cell D to the "Suitable neighbour cell". (see note)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location Update Type": Normal.
6	←		LOCATION UPDATING ACCEPT	"Equivalent PLMNs": PLMN E
7	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
8a	SS			The SS waits a period of 7~~8~~ minutes after the UE is switched on, this allowing the UE to make its first periodic search.
8b	SS			Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
8c	SS			The SS shall wait for 7 minutes during which no messages should be received.
9	SS			Set the cell type of cell A to the "Suitable neighbour cell". (see note) Within 6 minutes after step 9, the following messages shall be sent and received on Cell A.
10	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
11	←		RRC CONNECTION SETUP	
12	→		RRC CONNECTION SETUP COMPLETE	
13	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
14	←		LOCATION UPDATING ACCEPT	
15	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
16	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.5.4.1.5 Test requirement

1. At step 8c9, the UE shall not send any LOCATION UPDATING REQUEST on cell B or C.

2. At step 8c, the UE shall not send any LOCATION UPDATING REQUEST on cell B.

3. At step 13 the UE shall send a LOCATION UPDATING REQUEST message on Cell A.

9.4.5.4.2 Location updating / periodic search for HPLMN or higher priority PLMN / UE in manual mode

9.4.5.4.2.1 Definition

9.4.5.4.2.2 Conformance requirement

The periodic attempts shall only be performed if in automatic mode when the UE is in a VPLMN.

References

TS 22.011 clause 3.2.2.5. and TS 23.122 clause 4.4.3.3.

9.4.5.4.2.3 Test purpose

To verify that no Search for HPLMN or Higher Priority PLMN is performed when the UE is not in automatic mode.

9.4.5.4.2.4 Method of test

Initial conditions

- System Simulator:

  - two cells A and B, belonging to different location areas with location identification a and b. Cell A shall be a cell of the HPLMN and Cell B shall be a cell of the VPLMN with a Country Code the same as that of Cell A. Initially Cell A shall not be broadcasting. IMSI attach/detach is not allowed on either cell.

- User Equipment:

  - the UE is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell B shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell B. The UE is forced into manual selection mode. Cell A is made available. It is verified that the UE does not attempt to perform a location update on Cell A.

Expected sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell B. Set the cell type of Cell A to the "non-suitable cell". Set the cell type of Cell B to the "Serving cell". (see note)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location Update Type": Normal.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	UE			The UE is forced into manual selection mode.
10	SS			Set the cell type of cell A to the "Suitable neighbour cell". (see note)
11	SS			The SS waits a period of 6 minutes. During this time no messages shall be received on Cell A.
NOTE:			The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.5.4.2.5 Test requirement

At step 11 the UE shall not attempt to perform a location update.

9.4.5.4.3 Location updating / periodic search for HPLMN or higher priority PLMN / UE waits at least two minutes and at most T minutes

9.4.5.4.3.1 Definition

9.4.5.4.3.2 Conformance requirement

After switch on, the UE waits at least 2 minutes and at most T minutes before the first Search for HPLMN or higher priority PLMN is attempted.

References

TS 22.011 clause 3.2.2.5. and TS 23.122 4.4.3.3.

9.4.5.4.3.3 Test purpose

To verify that the UE waits at least 2 minutes and at most T minutes before attempting its first Search for HPLMN or higher priority PLMN.

9.4.5.4.3.4 Method of test

Initial Conditions

- System Simulator:

- two cells A and B, belonging to different location areas with location identification a and b. Cell A shall be a cell of the HPLMN and Cell B shall be a cell of the VPLMN with a Country Code the same as that of Cell A. Initially Cell A shall not be broadcasting. IMSI attach/detach is not allowed on either cell.

- User Equipment:

- the UE is switched off. The HPLMN Search Period on the USIM shall be set to 6 minutes. The location area information on the USIM is "deleted".

Related ICS/IXIT statements

Switch on/off button Yes/No.

Test Procedure

Only Cell B shall be broadcasting. The UE shall be switched on either by using the Power Switch or by applying power. A normal location updating is performed on Cell B. Cell A is made available. It is verified that the UE attempts to perform a location update on Cell A, after at least 2 minutes and at most T minutes have passed following power on.

Expected sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell B. Set the cell type of Cell A to the "non-suitable cell". Set the cell type of Cell B to the "Serving cell". (see note)
1a	UE			The UE is switched on by either using the Power Switch or by applying power.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location Update Type": Normal.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		Set the cell type of cell A to the "Suitable neighbour cell". (see note)
10		SS		The SS waits a period of 2 minutes after the UE is switched on. During this time no messages shall be received on Cell A. The following messages shall be sent and received on cell A. Within 6 minutes after the UE is switched on the following messages shall be sent and received on cell A.
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. This message shall be sent between 2 and 6 minutes after step 1
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
15	←		LOCATION UPDATING ACCEPT	
16	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
NOTE:	The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

9.4.5.4.3.5 Test requirement

At step 11 the UE shall attempt to perform a location update.

9.4.6 Location updating / interworking of attach and periodic

9.4.6.1 Definition

9.4.6.2 Conformance requirement

1) If the UE is in service state NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH or PLMN SEARCH-NORMAL SERVICE when the timer T3212 expires the location updating procedure is delayed until this service state is left.

2) The T3212 time-out value shall not be changed in the NO CELL AVAILABLE, LIMITED SERVICE, PLMN SEARCH and PLMN SEARCH-NORMAL SERVICE states.

3) If the selected cell is in the location area where the UE is registered and IMSI ATTACH is not required and timer T3212 has not expired, then the state is NORMAL SERVICE.

References

1) TS 24.008 clause 4.4.2.

2) TS 24.008 clause 4.4.2.

3) TS 24.008 clause 4.2.1.1.

9.4.6.3 Test purpose

1) To check that if the PLU timer expires while the UE is out of coverage, the UE informs the network of its return to coverage.

2) To check that the PLU timer is not disturbed by cells of forbidden PLMNs.

3) To check that if the PLU timer does not expire while out of coverage and if the mobile returns to the LA where it is updated, the UE does not inform the network of its return to coverage.

9.4.6.4 Method of test

Initial conditions

- System Simulator:

    - two cells, a and b, of different PLMNs;

    - T3212 is set to 12 minutes on cell a;

    - T3212 is set to 6 minutes on cell b;

    - IMSI attach is allowed in both cells.

- User Equipment:

    - the UE is deactivated. The PLMN of cell b is entered in the USIM's forbidden PLMN list.

Related ICS/IXIT statements

None.

Test procedure

The UE is activated and placed in automatic network selection mode. It performs IMSI attach. 1 minute after the end of the IMSI attach procedure, cell a is made unavailable~~switched off~~. The UE shall not location update on cell b. 8 minutes after the end of the IMSI attach procedure, cell a is made available~~switched on~~. The UE shall not location update on cell a before 11,75 minutes after the end of the IMSI attach procedure. The UE shall perform a periodic location update on cell a between 11,75 minutes and 12,25 minutes after the end of the IMSI attach procedure.

3 minutes after the end of the periodic location updating procedure, cell a is made unavailable~~switched off~~. The UE shall not location update on cell b. 14 minutes after the end of the periodic location updating procedure, cell a is made available~~switched on~~ and cell b is made unavailable~~switched off~~. The UE shall perform a location update on cell a before 17 minutes after the end of the periodic location updating procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is activated in automatic network selection mode.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type": IMSI attach.
6	←		LOCATION UPDATING ACCEPT	
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9		SS		The SS waits 1 minute after step 8. Set the cell type of cell A to the "non-suitableOff cell". (see note)
10		SS		The SS waits 8 minutes after step 8. Set the cell type of cell A to the "Serving cell". (see note)
11	→		RRC CONNECTION REQUEST	This message shall be sent by the UE between 11 minutes 45s and 12 minutes 15s after step 8.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"location updating type": periodic.
15	←		LOCATION UPDATING ACCEPT	
16	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
18		SS		The SS waits 3 minutes after step 17. Set the cell type of cell A to the "non-suitableOff cell". (see note)
19		SS		The SS waits 14 minutes after step 17. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitableOff cell". (see note)
20	→		RRC CONNECTION REQUEST	This message shall be sent by the UE before 17 minutes after step 17.
21	←		RRC CONNECTION SETUP	
22	→		RRC CONNECTION SETUP COMPLETE	
23	→		LOCATION UPDATING REQUEST	"Location updating type" = periodic.
24	←		LOCATION UPDATING ACCEPT	
25	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
26	→		RRC CONNECTION RELEASE COMPLETE	
27		UE		The UE shall not initiate an RRC connection establishment. This is checked during 12 minutes.
NOTE:			The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitableOff cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.6.5 Test requirement

1) At step 20 the UE shall send an RRC CONNECTION REQUEST and at step 23 the UE shall attempt to perform a location update.

2) At step 11 the UE shall send an RRC CONNECTION REQUEST and at step 14 the UE shall attempt to perform a location update.

3) At step 27 the UE shall not initiate an RRC connection during 12minutes.

9.4.7 Location Updating / accept with replacement or deletion of Equivalent PLMN list

9.4.7.1 Definition

Test to verify that the UE replaces or deletesremoves its stored Equivalent PLMN list when no Equivalent PLMN list is included in the LOCATION UPDATING ACCEPT message from the network during a Location Update.

9.4.7.2 Conformance requirement

1) The network may also send a list of "equivalent PLMNs" in the LOCATION UPDATING ACCEPT message. Each entry of the list contains a PLMN code (MCC+MNC). The mobile station shall store the list, as provided by the network, except that any PLMN code that is already in the "forbidden PLMN list" shall be removed from the "equivalent PLMNs" list before it is stored by the mobile station. In addition the mobile station shall add to the stored list the PLMN code of the network that sent the list. All PLMNs in the stored list shall be regarded as equivalent to each other for PLMN selection, cell selection/re-selection and handover. The stored equivalent PLMN list in the mobile station shall be replaced on each occurrence of the LOCATION UPDATING ACCEPT message.

2) If no equivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message, then the stored equivalent PLMN list in the mobile station shall be deleted. The list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.

References

TS 24.008 4.4.4.6

9.4.7.3 Test purpose

1) To verify that the UE replaces its stored equivalent PLMN list if the equivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message received from the network during a location updating procedure.

2) To verigy that Tthe UE shall deletes its stored Eequivalent PLMN list if no Eequivalent PLMN list is contained in the LOCATION UPDATING ACCEPT message received from the network during a Llocation Uupdatinge procedure.

9.4.7.4 Method of test

Initial conditions:

-   System Simulator:

    -   two cells: A and B, with different PLMN Codes (PLMN 1 and PLMN 2 respectively). IMSI attach/detach is not allowed on either cell.

-   User Equipment:

    -   the UE is switched off. The HPLMN is PLMN 3 and no other information about PLMN priorities or forbidden PLMNs is stored in the USIM. The equivalent PLMN list in the mobile station is empty.

Cell_selection_and_reselection_quality_measure is CPICH_RSCP (FDD).

~~Cell~~	~~CPICH_RSCP / RF signal level [dBm] (FDD)~~	~~P-CCPCH_RSCP/ RF signal level [dBm] (TDD)~~	~~Test Channel~~	~~PLMN~~
~~Cell 1~~	~~-72~~	~~-61~~	~~1~~	~~PLMN 1~~
~~Cell 2~~	~~-48~~	~~-48~~	~~2~~	~~PLMN 2~~

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

When the UE is initially switched on it will perform a normal location updating in Cell A, which is the only suitable cell available. The LOCATION UPDATING ACCEPT message sent by the SS on reception of the LOCATION UPDATING REQUEST message shall include PLMN 2 in the equivalent PLMN list. When Cell B is made available and its RF signal level is higher than that of Cell A the UE will perform a normal location updating in this cell. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN 1 in the equivalent PLMN list. When Cell B is made unavailable the UE shall perform a normal location updating again in Cell A, but in this ocassion the LOCATION UPDATING ACCEPT message shall contain an empty equivalent PLMN list. When Cell B is made available again and its RF signal level is higher than that of Cell A the UE shall not perform a normal location updating in this cell since it is not in the ePLMN list.

a) ~~The SS activates cell 1 and monitors the cell 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) ~~A LOCATION UPDATE ACCEPT message shall be sent on reception of a LOCATION UPDATE message from the UE on cell 1. The LOCATION UPDATE ACCEPT message shall include PLMN 2 in the equivalent PLMN list.~~

e) ~~The SS activates cell 2 and monitors the cell for random access requests from the UE.~~

f) ~~A LOCATION UPDATE ACCEPT message shall be sent on reception of a LOCATION UPDATE message from the UE on cell 2. The LOCATION UPDATE ACCEPT message shall include PLMN 1 in the equivalent PLMN list.~~

g) ~~Cell 2 is switched off.~~

h) ~~The SS waits for random access requests from the UE.~~

i) ~~A LOCATION UPDATE ACCEPT message shall be sent on reception of a LOCATION UPDATE message from the UE on cell 1. The LOCATION UPDATE ACCEPT message shall include no equivalent PLMN list.~~

j) ~~The SS activates cell 2 and monitors the cell for random access requests from the UE.~~

k) ~~The SS waits for random access requests from the UE.~~

Expected Sequence

Step	Direction		Message	Contents
	UE	SS		
1		SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Suitable neighbour cell". Set the cell type of Cell B to the "non-suitable cell". (see note)
2	UE			The UE is switched on by either using the Power Switch or by applying power.
3	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
4	←		RRC CONNECTION SETUP	
5	→		RRC CONNECTION SETUP COMPLETE	
6	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
7	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs: PLMN 2
8	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
9	→		RRC CONNECTION RELEASE COMPLETE	
10		SS		The following messages shall be sent and received on Cell B. Set the cell type of Cell B to the "Serving cell". (see note)
11	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
12	←		RRC CONNECTION SETUP	
13	→		RRC CONNECTION SETUP COMPLETE	
14	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
15	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs : PLMN 1
16	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
17	→		RRC CONNECTION RELEASE COMPLETE	
18		SS		The following messages shall be sent and received on Cell A. Set the cell type of Cell B to the "non-suitable cell". (see note)
19	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
20	←		RRC CONNECTION SETUP	
21	→		RRC CONNECTION SETUP COMPLETE	
22	→		LOCATION UPDATING REQUEST	"Location Update Type": normal.
23	←		LOCATION UPDATING ACCEPT	Equivalent PLMNs : empty
24	←		RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
25	→		RRC CONNECTION RELEASE COMPLETE	
26		SS		Set the cell type of Cell B to the "Serving cell". (see note)
27		SS		The SS shall wait for 7 minutes during which no messages should be received.
NOTE:			The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.7.5   Test requirements

1)   At step 14 the UE shall perform a normal location updating in Cell B.

2)   At step 27 the UE shall not perform a normal location updating in Cell B.

1) After step c) the UE will perform a Location Update in Cell 1 that will be accepted by the SS.

2) After step d) the displayed PLMN in the UE shall be PLMN 1.

3) After step e) the UE will perform a Location Update in Cell 2 that will be accepted by the SS.

4) After step f) the displayed PLMN in the UE shall be PLMN 2.

5) After step h) the UE will perform a Location Update in Cell 1 that will be accepted by the SS.

6) After step i) the displayed PLMN in the UE shall be PLMN 1.

7) After step k) there shall be no random access request from the UE on cell 2.

9.4.8   Location Updating after UE power off

9.4.8.1   Definition

Test to verify that the UE stores the ~~E~~equivalent PLMN list at UE power off and uses the stored ~~E~~equivalent PLMN list after UE switch on.

9.4.8.2   Conformance requirement

~~The network may also send a list of "equivalent PLMNs" in the LOCATION UPDATING ACCEPT message. Each entry of the list contains a PLMN code (MCC+MNC). The mobile station shall store the list, as provided by the network, except that any PLMN code that is already in the "forbidden PLMN list" shall be removed from the "equivalent PLMNs" list before it is stored by the mobile station. In addition the mobile station shall add to the stored list the PLMN code of the network that sent the list. All PLMNs in the stored list shall be regarded as equivalent to each other for PLMN selection, cell selection/re-selection and handover. The stored list in the mobile station shall be replaced on each occurrence of the LOCATION UPDATING ACCEPT message. If no list is contained in the message, then the stored list in the mobile station shall be deleted.~~ The equivalent PLMN list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.

References

TS 24.008 4.4.4.6

9.4.8.3   Test purpose

To verify that the UE stores the equivalent PLMN list at UE switch off and uses the stored equivalent PLMN list after UE switch on~~The Equivalent PLMN list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on~~.

9.4.8.4   Method of test

Initial conditions

-   System Simulator:

   -   three cells: A, B and C. Cell A belongs to PLMN1 which is HPLMN. Cell B belongs to PLMN2. Cell C belongs to PLMN3.

-   User Equipment:

   -   the UE is switched off;

   -   ~~T~~the UE is in automatic mode for PLMN selection;~~ mode.~~

   -   ~~T~~the UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF$_{LOCI}$		PLMN 1
EF$_{HPLMNwAcT}$	1st	PLMN 1
EF$_{PLMNwAcT}$	Empty	
EF$_{OPLMNwAcT}$	1st	PLMN 3
	2nd	PLMN 2

~~The SS simulates three cells as listed below.~~

~~Cell~~	~~Test Channel~~	~~PLMN~~
~~Cell 1~~	~~1~~	~~PLMN 1~~
~~Cell 2~~	~~2~~	~~PLMN 2~~
~~Cell 3~~	~~3~~	~~PLMN 3~~

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

When the UE is initially swiched on it will perform a normal location updating in Cell A, which is the only suitable cell available and belongs to the HPLMN. The LOCATION UPDATING ACCEPT message sent by the SS shall include PLMN2 in the equivalent PLMN list. The UE shall be swiched-off. Cell A shall be made unavailable and Cells B and C shall be made available. When the UE is switched-on again, the UE shall perform a normal location updating in Cell B and not in Cell C because PLMN2 is stored in the UE equivalent PLMN list.

a) ~~The SS activates cell 1 and monitors the cell 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) ~~A LOCATION UPDATE ACCEPT message shall be sent on reception of a LOCATION UPDATE message from the UE on cell 1. The LOCATION UPDATE ACCEPT message shall include PLMN 2 in the equivalent PLMN list.~~

e) ~~The UE is switched off.~~

f) ~~The SS deactivates cell 1 and activates cell 2 and cell 3.~~

g) ~~The UE is switched on.~~

h) ~~The SS waits for random access requests from the UE.~~

Expected Sequence

Step	Direction UE SS	Message	Contents
1	SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Serving cell". Set the cell type of Cell B and Cell C to the "non-suitable cell". (see note)
2	UE		The UE is switched on by either using the Power Switch or by applying power.
3	→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
4	←	RRC CONNECTION SETUP	
5	→	RRC CONNECTION SETUP COMPLETE	
6	→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
7	←	LOCATION UPDATING ACCEPT	Equivalent PLMN List: PLMN 2
8	←	RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
9	→	RRC CONNECTION RELEASE COMPLETE	
10	UE		The following messages shall be sent and received on Cell B. The UE is switched-off
11	SS		Set the cell type of Cell A to the "non-suitable cell". Set the cell type of Cell B to the "suitable neighbour cell". Set the cell type of Cell C to the "suitable neighbour cell". (see note)
12	UE		The UE is switched-on, either by using the Power Switch or by applying power.
13	→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
14	←	RRC CONNECTION SETUP	
15	→	RRC CONNECTION SETUP COMPLETE	
16	→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
17	←	LOCATION UPDATING ACCEPT	
18	←	RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
19	→	RRC CONNECTION RELEASE COMPLETE	
NOTE:		The definitions for "Serving cell", "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.8.5 Test requirements

1) ~~After step c) the UE will perform a Location Update in Cell 1 that will be accepted by the SS.~~

2) ~~After step d) the displayed PLMN in the UE will be PLMN 1.~~

3) At~~fter~~ step 16~~h)~~ the UE shall perform a normal L~~l~~ocation U~~u~~pdat~~ing~~e in Cell B~~2 that will be accepted by the SS~~.

9.4.9 Location Updating / Accept, Interaction between Equivalent PLMNs and Forbidden PLMNs ~~Storage of Equivalent PLMN list.~~

9.4.9.1 Definition

Test to verify that, before storing the 'equivalent PLMN list' received from the network during a Location Update, the UE removes any PLMN already included in the 'forbidden PLMN list'. Consequently the UE shall not select a PLMN Equivalent to the registered PLMN if it is included in the 'forbidden PLMN list' in the USIM.

9.4.9.2 Conformance requirement

1. ~~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".~~

2. ~~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 subclause 4.5.2) attempts to perform a Location Registration.~~

3. ~~Automatic Network Selection Mode Procedure~~

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

   i) ~~HPLMN (if not previously selected);~~

   ii) ~~each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);~~

   iii) ~~each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);~~

   iv) ~~other PLMN/access technology combinations with received high quality signal in random order;~~

   v) ~~other PLMN/access technology combinations in order of decreasing signal quality.~~

4. ~~Allowable PLMN: In the case of a MS operating in MS operation mode A or B, this is a PLMN which is not in the list of "forbidden PLMNs" in the MS.~~

5. ~~The network may also send a list of "equivalent PLMNs" in the LOCATION UPDATING ACCEPT message. Each entry of the list contains a PLMN code (MCC+MNC).~~ The mobile station shall store the equivalent PLMN list, as provided by the network, except that any PLMN code that is already in the "forbidden PLMN list" shall be removed from the "equivalent PLMNs" list before it is stored by the mobile station. ~~In addition the mobile station shall add to the stored list the PLMN code of the network that sent the list. All PLMNs in the stored list shall be regarded as equivalent to each other for PLMN selection, cell selection/re-selection and handover. The stored list in the mobile station shall be replaced on each occurrence of the LOCATION UPDATING ACCEPT message. If no list is contained in the message, then the stored list in the mobile station shall be deleted. The list shall be stored in the mobile station while switched off so that it can be used for PLMN selection after switch on.~~

References

1. ~~TS 23.122, 3.1~~

2. ~~TS 23.122, 4.4.3.1~~

3. ~~TS 23.122, 4.4.3.1.1~~

4. ~~TS 23.122, 1.2~~

5. ~~TS~~ TS 24.008~~,~~ 4.4.4.6

9.4.9.3 Test purpose

1. To verify that ~~T~~the UE shall not select a forbidden PLMN even though it is included in the equivalent PLMN list provided by the network because~~(a~~ forbidden PLMN~~s~~ shall not be stored in the mobile's equivalent PLMN list ~~even if it is indicated by the network)~~.

9.4.9.4 Method of test

Initial conditions

- System Simulator:

  - two cells: A, and B. Cell A belongs to PLMN1. Cell B belongs to PLMN2.

- User Equipment:

  - the UE is switched off;

  - The UE is in automatic PLMN selection mode.

~~All Radio Access Technology USIM fields and cells are UTRAN.~~

~~Cell~~	~~Test Channel~~	~~PLMN~~
~~Cell 1~~	~~1~~	~~PLMN 1~~
~~Cell 2~~	~~2~~	~~PLMN 2~~

- ~~T~~the UE is equipped with a USIM containing default values except for those listed below.

USIM field	Priority	PLMN
EF$_{LOCI}$		PLMN 1
EF$_{HPLMNwAcT}$	1st	PLMN 3
EF$_{PLMNwAcT}$	1st	PLMN 2
EF$_{FPLMN}$	PLMN 2	

Related ICS/IXIT statement(s)

Switch off on button Yes/No.

Test procedure

Cells A and B are made available. When the UE is swiched-on it will perform a normal location updating in Cell A, since Cell B belongs to a forbidden PLMN. The SS will respond sending a LOCATION UPDATING ACCEPT message that includes PLMN2 in the equivalent PLMN list. However the UE shall not store PLMN 2 in its equivalent PLMN list as it is a forbidden PLMN. Therefore, when Cell A is made unavailable the UE will not select the only remaining cell (Cell B), remaining in limited service state.

a) ~~The SS activates cells 1 and 2 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) ~~A LOCATION UPDATE ACCEPT message shall be sent on reception of a LOCATION UPDATE REQUEST message from the UE. The Location Update Accept message shall include PLMN 2 in the equivalent PLMN list.~~

e) ~~Cell 1 is switched off~~

f) ~~The SS waits for random access requests from the UE~~

Expected Sequence

Step	Direction UE SS	Message	Contents
1	SS		The following messages shall be sent and received on Cell A Set the cell type of Cell A to the "Suitable neighbour cell". Set the cell type of Cell B to the "Suitable neighbour cell". (see note)
2	UE		The UE is switched on by either using the Power Switch or by applying power.
3	→	RRC CONNECTION REQUEST	"Establishment cause": Registration.
4	←	RRC CONNECTION SETUP	
5	→	RRC CONNECTION SETUP COMPLETE	
6	→	LOCATION UPDATING REQUEST	"Location Update Type": normal.
7	←	LOCATION UPDATING ACCEPT	Equivalent PLMN List: PLMN 2
8	←	RRC CONNECTION RELEASE	After sending this message the SS waits for the disconnection of the main signalling link.
9	→	RRC CONNECTION RELEASE COMPLETE	
10	SS		Set the cell type of Cell A to the "non-suitable cell". (see note)
11	SS		The SS shall wait for 7 minutes during which no messages should be received.
NOTE:	The definitions for "Suitable neighbour cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

9.4.9.5 Test requirements

At step 11 the UE shall not perform a normal location updating in Cell B.~~After step c) the UE will perform a Location Update in Cell 1 that will be accepted by the SS.~~

~~After step d), The displayed PLMN in the UE shall be PLMN 1.~~

~~In step f), the UE shall inform that only limited service is possible.~~

9.5 MM connection

9.5.1 Introduction

[tbd]

9.5.2 MM connection / establishment in security mode

9.5.2.1 Definition

9.5.2.2 Conformance requirement

1) The UE shall be able to correctly set up an MM connection in a Mobile Originating CM connection attempt and send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to the TMSI.

2) The UE shall be able to interpret security mode setting as acceptance of its CM service request i.e. send a CM message.

References

TS 24.008 clause 4.5.1.1.

9.5.2.3 Test purpose

To verify that the UE can correctly set up an MM connection in an origination and interpret security mode setting as acceptance of its CM service request.

9.5.2.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is initiated. After the UE has sent the CM SERVICE REQUEST message to the SS, an authentication procedure and a security mode setting procedure are performed. Then, the UE sends a CM message and the SS clears the call and releases the RRC CONNECTION.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		AUTHENTICATION REQUEST	
7	→		AUTHENTICATION RESPONSE	
8	←		SECURITY MODE COMMAND	
9	→		SECURITY MODE COMPLETE	
A10	→		SETUP	
A11	←		RELEASE COMPLETE	"Cause" IE: "unassigned number".
B10	→		REGISTER	
B11	←		RELEASE COMPLETE	
C10	→		CP-DATA	
C11	←		CP-ACK	
C12	←		CP-DATA	
C13	→		CP-ACK	
14	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
15	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.2.5 Test requirement

At step 5 the UE shall send the CM SERVICE REQUEST message to the SS.

At step A10 or B10 or C10 the UE shall send a CM message and the SS shall release the RRC connection (step 14).

9.5.3 MM connection / establishment in non-security mode

9.5.3.1 Definition

9.5.3.2 Conformance requirement

Upon reception of the CM SERVICE ACCEPT message, the UE shall send a CM message.

References

TS 24.008 clause 4.5.1.1.

9.5.3.3 Test purpose

To verify that the UE can correctly set up an MM connection in an originating CM connection establishment when security mode setting is not required.

9.5.3.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. The MM-connection is established without invoking the security mode setting procedure.

Then, the UE sends a CM message and the SS releases the RRC CONNECTION.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE ACCEPT	
A7	→		SETUP	
B7	→		REGISTER	
C7	→		CP-DATA	
C8	←		CP-ACK	
C9	←		CP-DATA	
C10	→		CP-ACK	
11	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.3.5 Test requirement

At step 5 the UE shall send the CM SERVICE REQUEST message to the SS.

At step A7 or B7 or C7 the UE shall send a CM message and the SS shall release the RRC connection (step 12).

9.5.4 MM connection / establishment rejected

9.5.4.1 Definition

9.5.4.2 Conformance requirement

Upon reception of a CM SERVICE REJECT message, the UE shall not send any layer 3 message, start timer T3240 and enter the "wait for network command" state.

References

TS 24.008 clause 4.5.1.1.

9.5.4.3 Test purpose

To verify that the UE does not send a layer 3 message when the service request is rejected by the SS.

9.5.4.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS responds with a CM SERVICE REJECT message with reject cause "requested service option not subscribed". It is checked that the UE does not send a layer 3 message.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			A MO CM connection is attempted
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE REJECT	"Reject cause" IE: "requested service option not subscribed".
7	SS			The UE shall not send a layer 3 message. This is checked during 5 s.
8	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
9	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.4.5 Test requirement

The UE shall attempt MO CM connection (step 1).

At step 7 the UE shall not send a layer 3 message and at step 9 the UE shall send an RRC CONNECTION RELEASE COMPLETE message.

9.5.5 MM connection / establishment rejected cause 4

9.5.5.1 Definition

9.5.5.2 Conformance requirement

1) The UE shall be able to correctly set up an MM connection in a Mobile Originating CM connection attempt and send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to the TMSI.

2) The UE, when receiving a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR" shall wait for the network to release the RRC connection.

3) The UE shall then be able to perform a location updating procedure.

References

TS 24.008 clause 4.5.1.1.

9.5.5.3 Test purpose

To verify that the UE can correctly accept a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR".

9.5.5.4 Method of test

Initial conditions

- System Simulator:

  - 1 cell, default parameters.

- User Equipment:

  - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS responds with a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR". On receipt of this message, the UE shall delete any TMSI, LAI, cipher key and cipher key sequence number. The RRC CONNECTION is released. It is checked that the UE performs a normal location updating procedure.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	CKSN = initial value, Mobile identity = TMSI.
6	←		CM SERVICE REJECT	"Reject cause" = "IMSI unknown in VLR".
7	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
8	→		RRC CONNECTION RELEASE COMPLETE	
9	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
10	←		RRC CONNECTION SETUP	
11	→		RRC CONNECTION SETUP COMPLETE	
12	→		LOCATION UPDATING REQUEST	"Ciphering key sequence number" = "No key is available". "Mobile identity" = IMSI. "Location area identification" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
13	←		AUTHENTICATION REQUEST	
14	→		AUTHENTICATION RESPONSE	
14a	←		SECURITY MODE COMMAND	
14b	→		SECURITY MODE COMPLETE	
15	←		LOCATION UPDATING ACCEPT	"Mobile identity" = new TMSI.
16	→		TMSI REALLOCATION COMPLETE	
17	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
18	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.5.5 Test requirement

1) The UE shall attempt MO CM connection (at step 1) and at step 5 the UE shall send a CM SERVICE REQUEST message with CKSN information element as stored in the USIM and Mobile Identity information element set to the TMSI.

2) At step 6 the SS should send a CM SERVICE REJECT message with reject cause "IMSI unknown in VLR", and at step 8 the UE shall send an RRC CONNECTION RELEASE message.

3) At step 12 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

9.5.6 MM connection / expiry T3230

9.5.6.1 Definition

9.5.6.2 Conformance requirement

At T3230 expiry (i.e. no response is given but an RRC connection is available) the MM connection establishment shall be aborted.

References

TS 24.008 clauses 4.5.1.2 and 11.2.

9.5.6.3 Test purpose

To verify that at T3230 expiry, the UE aborts the MM-connection establishment.

9.5.6.4 Method of test

Initial conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. After the UE has sent the CM SERVICE REQUEST message to the SS, the SS waits for expiry of timer T3230. It is checked that the UE send a MM STATUS message and waits for the release of the RRC-connection.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6		SS		The SS waits for expiry of timer T3230.
7	←		CM SERVICE ACCEPT	
8	→		MM STATUS	"Reject cause" IE is "message type not compatible with protocol state".
9	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.6.5   Test requirement

The UE shall attempt MO CM connection (step 1).

At step 8 the UE shall send a MM STATUS message.

9.5.7   MM connection / abortion by the network

9.5.7.1   MM connection / abortion by the network / cause #6

9.5.7.1.1   Definition

9.5.7.1.2   Conformance requirement

1) Upon reception of an ABORT message, the UE shall release any ongoing MM connection and enter the "wait for network command" state.

2) If the cause in the ABORT message was cause #6, the UE shall:

   2.1 not perform normal location updating;

   2.2 not perform periodic location updating;

   2.3 not respond to paging with TMSI;

   2.4 reject any request for Mobile Originating call establishment except Emergency call;

   2.5 not perform IMSI detach if deactivated.

3) After reception of an ABORT message with cause #6, the UE, if it supports speech, shall accept a request for an emergency call by sending a RRC CONNECTION Request message with the establishment cause set to "emergency call".

4) After reception of an ABORT message with cause #6, the UE shall delete the stored LAI, CKSN and TMSI.

Reference(s)

TS 24.008 clause 4.3.5.

9.5.7.1.3 Test purpose

To check that upon reception of an ABORT message with cause #6 during call establishment:

- the UE does not send any layer 3 message;

- after reception of an ABORT message and after having been deactivated and reactivated, the UE performs location updating using its IMSI as mobile identity and indicates deleted LAI and CKSN;

- the UE does not perform location updating, does not answer to paging with TMSI, rejects any request for mobile originating call except emergency call, does not perform IMSI detach;

- the UE accepts a request for emergency call.

9.5.7.1.4 Method of test

Initial Conditions

- System Simulator:

    - 2 cells, default parameters.

- User Equipment:

    - the UE has a valid TMSI, CKSN and CK, IK. It is "idle updated" on cell B.

Related ICS/IXIT Statement(s)

USIM removal possible while UE is powered Yes/No.

Switch off on button Yes/No.

Support of speech Yes/No.

Test procedure

A mobile originating CM connection is attempted. Upon reception of the AUTHENTICATION RESPONSE message, the SS sends an ABORT message with cause #6. The SS waits for 5 s. The UE shall not send any layer 3 message. The SS releases the RRC connection.

The SS checks that the UE has entered the state MM IDLE substate NO IMSI, i.e. does not perform normal location updating, does not perform periodic updating, does not respond to paging, rejects any requests from CM entities except emergency calls and does not perform IMSI detach if deactivated.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
The following messages are sent and shall be received on cell B				
1	UE			A mobile originating CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		AUTHENTICATION REQUEST	
7	→		AUTHENTICATION RESPONSE	
8	←		ABORT	"reject cause" = #6.
9	SS			The SS waits for 5 s.
10	UE			The UE shall not send any layer 3 message during that time.
11	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.

Step	Direction UE	SS	Message	Comments
12	→		RRC CONNECTION RELEASE COMPLETE	
The following messages are sent and shall be received on cell A.				
13	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
14	UE			The UE performs cell reselection according to procedure as specified in (this however is not checked until step 27). The UE shall not initiate an RRC connection establishment on cell A or on cell B.
15	SS			The SS waits at least 7 minutes for a possible periodic updating.
16	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B.
17	←		PAGING TYPE 1	"UE identity" IE contains TMSI. Paging Cause: Terminating Conversational Call.
18	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is verified during 3 s.
19	UE			A MO CM connection is attempted.
20	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
21	UE			If the UE supports speech (see ICS), an emergency call is attempted.
22	→		RRC CONNECTION REQUEST	"Establishment cause": Emergency call.
23	←		RRC CONNECTION SETUP	
24	→		RRC CONNECTION SETUP COMPLETE	
25	→		CM SERVICE REQUEST	"CM service type": Emergency call establishment.
26	←		CM SERVICE ACCEPT	
27	→		EMERGENCY SETUP	
28	←		RELEASE COMPLETE	"Cause" = unassigned number.
29	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
30	→		RRC CONNECTION RELEASE COMPLETE	
31	UE			If possible (see ICS) USIM detachment is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
32	UE			The UE shall not initiate an RRC connection establishment on cell A or on cell B. This is checked during 3 s.
33	UE			Depending on what has been performed in step 31 the UE is brought back to operation.
34	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
35	←		RRC CONNECTION SETUP	
36	→		RRC CONNECTION SETUP COMPLETE	
37	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = no key available, "Mobile Identity" = IMSI, "LAI" = deleted LAI (the MCC and MNC hold the previous values, the LAC is coded FFFE).
38	←		AUTHENTICATION REQUEST	"CKSN" = CKSN1.

Step	Direction		Message	Comments
	UE	SS		
39	→		AUTHENTICATION RESPONSE	
40		←	LOCATION UPDATING ACCEPT	"Mobile Identity" = TMSI.
41	→		TMSI REALLOCATION COMPLETE	
42		←	RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
43	→		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.

9.5.7.1.5 Test requirement

1) At step 10 the UE shall not send any layer 3 message and at step 12 the UE shall send an RRC CONNECTION RELEASE COMPLETE message.

2)

2.1 At step 14 the UE shall not initiate an RRC connection establishment (not perform normal location updating).

2.2 At step 16 the UE shall not initiate an RRC connection establishment.(not perform periodic location updating).

2.3 At step 18 the UE shall not initiate an RRC connection establishment (not respond to paging with TMSI).

2.4 At step 20 the UE shall not initiate an RRC connection establishment (reject any request for Mobile Originating call establishment).

2.5 At step 32 the UE shall not initiate an RRC connection establishment.(not perform IMSI detach).

3) At step 22 the UE shall send an RRC CONNECTION REQUEST message with the establishment cause set to "emergency call".

4) At step 37 the UE send a LOCATION UPDATING REQUEST message with the Mobile Identity IE set to its IMSI, CKSN IE set to "no key is available" and the Location Updating type set to "deleted LAI".

9.5.7.2 MM connection / abortion by the network / cause not equal to #6

9.5.7.2.1 Definition

9.5.7.2.2 Conformance requirement

Upon reception of an ABORT message, the UE shall release any ongoing MM connection and enter the "wait for network command" state.

Reference(s)

TS 24.008 clause 4.3.5.

9.5.7.2.3 Test purpose

To check that when multiple MM connections are established, the UE releases all MM connections upon reception of an ABORT message, in the case when the two MM connections are established for a mobile terminating call and a non call related supplementary service operation.

9.5.7.2.4 Method of test

Initial Conditions

- System Simulator:

    - 1 cell, default parameters.

- User Equipment:

    - the UE is in state U10 of a mobile terminating call.

Related ICS/IXIT Statement(s)

The UE supports a non call related supplementary service operation during an active call Yes/No.

Test procedure

A non call related supplementary service operation is attempted at the UE. Upon reception of the REGISTER message, the SS sends an ABORT message with cause # 17. The SS sends a DISCONNECT using the TI of the mobile terminating call. Upon reception of the RELEASE message, the SS send a RELEASE COMPLETE message with the PD and TI of the DISCONNECT message and with cause #81. The SS releases the RRC connection.

Expected Sequence

This procedure is performed if the UE supports non call related supplementary service operation.

Step	Direction		Message	Comments
	UE	SS		
1	UE			A non call related supplementary service operation is attempted at the UE.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Originating Background Call.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE ACCEPT	
7	→		REGISTER	
8	←		ABORT	"reject cause" = #17.
9	←		DISCONNECT	with the TI of the mobile terminating call.
9a	→		RELEASE	
10	←		RELEASE COMPLETE	"cause" = #81. Same PD and TI as the DISCONNECT message.
11	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.7.2.5 Test requirement

At step 10 the SS shall send a RELEASE COMPLETE message and at step 12 the UE shall send an RRC CONNECTION RELEASE COMPLETE message.

9.5.8 MM connection / follow-on request pending

9.5.8.1 MM connection / follow-on request pending / test 1

9.5.8.1.1 Definition

9.5.8.1.2 Conformance requirement

The UE shall not attempt to establish a new MM connection after location updating on the same RRC connection if not allowed by the network.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.1.3 Test purpose

To check that when the network does not include the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has a CM application request pending does not attempt to establish a new MM connection on that RRC connection.

9.5.8.1.4 Method of test

Initial Conditions

- System Simulator:

    - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".

- User Equipment:

    - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

None.

Test procedure

The UE is activated and a CM connection is attempted during the location updating procedure. The SS does not include the follow on proceed information element in the LOCATION UPDATING ACCEPT message. The SS waits for at least 8 s. The UE shall not send any layer 3 message for 8 s.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	location updating type = IMSI attach. Then the SS waits for 15 s. During this delay a CM connection is attempted.
6	←		LOCATION UPDATING ACCEPT	follow on proceed IE not included.
7		SS		The SS wait for at least 8 s.
8		UE		The UE shall not send any layer 3 message for 8 s after reception of the LOCATION UPDATING ACCEPT message.
9	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
10	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.1.5 Test requirement

After step 8 the UE shall not send any layer 3 messages.

9.5.8.2 MM connection / follow-on request pending / test 2

9.5.8.2.1 Definition

9.5.8.2.2 Conformance requirement

A UE supporting the follow-on request procedure and having a CM connection request pending shall correctly establish an MM connection following a location update when allowed by the network.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.2.3 Test purpose

To check that when the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that supports the follow on request procedure and that has a CM application request pending establishes successfully a new MM connection on that RRC connection.

9.5.8.2.4 Method of test

Initial Conditions

- System Simulator:

    - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".

- User Equipment:

    - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

UE supports the follow on request procedure Yes/No.

Test procedure

The UE is activated and a CM connection is attempted during the location updating procedure. The SS includes the follow on proceed information element in the LOCATION UPDATING ACCEPT message. The SS waits for at least 8 s.

If the UE supports the follow on request procedure:

- the UE shall send a CM SERVICE REQUEST. Upon reception of that message, the SS sends a CM SERVICE ACCEPT message. The UE shall send an initial CM message. Upon reception of that message, the SS releases the RRC connection.

If the UE does not support the follow on request procedure:

- the UE shall not send any layer 3 message for 8 s.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	Location updating type = IMSI attach. Then the SS waits for 15 s. During this delay a CM connection is attempted.
6	←		LOCATION UPDATING ACCEPT	follow on proceed IE included.
				If the UE supports the follow on request procedure (see ICS) steps A7 to A9 are performed, otherwise steps B7 to B8 are performed.
A7	→		CM SERVICE REQUEST	
A8	←		CM SERVICE ACCEPT	
A9	→		An initial CM message	
B7	SS			The SS wait for at least 8 s.
B8	UE			The UE shall not send any layer 3 message for 8 s after reception of the LOCATION UPDATING ACCEPT message.
10	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
11	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.2.5   Test requirement

After step 6:

The UE shall send a CM SERVICE REQUEST if the UE supports the follow on request procedure.

The UE shall not send any layer 3 message if the UE does not support the follow on request procedure.

9.5.8.3 MM connection / follow-on request pending / test 3

9.5.8.3.1 Definition

9.5.8.3.2 Conformance requirement

1) The UE shall not set the follow on proceed IE in a LOCATION UPDATING REQUEST message if no MM connection request is pending.

2) When the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has no CM application request pending shall not attempt to establish a new MM connection on that RRC connection.

3) The UE shall correctly handle a CM connection established by the network on the RRC connection that was used for the location updating procedure.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.5.8.3.3 Test purpose

1) To check that a UE that has no CM application request pending sets the follow on proceed IE to No follow-on request pending in a LOCATION UPDATING REQUEST message.

2) To check that when the network includes the follow on proceed IE in a LOCATION UPDATING ACCEPT message, a UE that has no CM application request pending does not attempt to establish a new MM connection on that RRC connection.

3) To check that the UE accepts establishment by the network of a new MM connection on the existing RRC connection.

9.5.8.3.4 Method of test

Initial Conditions

- System Simulator:

    - 1 cell, ATT flag is set to "MSs in the cell shall apply IMSI attach and detach procedure".

- User Equipment:

    - the UE has a valid TMSI and is deactivated.

Related ICS/IXIT Statement(s)

Supported services on TCH.

Test procedure

The UE is activated. The UE performs location updating. The UE shall set the follow on proceed IE to No follow-on request pending in the LOCATION UPDATING REQUEST message. The SS includes the follow on proceed IE in the LOCATION UPDATING ACCEPT message. The SS waits for 5 s. The UE shall not send any layer 3 message for 5 s. The SS sends a SETUP message to the UE requesting a basic service supported by the UE. The UE shall send either a CALL CONFIRMED message if it supports a service on TCH or a RELEASE COMPLETE with cause #88.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is activated.
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration.
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"Location updating type" = IMSI attach. The FOR bit is set to No follow-on request pending.
6	←		LOCATION UPDATING ACCEPT	follow on proceed IE is included.
7	SS			The SS wait for 5 s.
8	UE			The UE shall not send any layer 3 message for 5 s after reception of the LOCATION UPDATING ACCEPT message.
9	←		SETUP	
A10	→		CALL CONFIRMED	If the UE supports a basic service on TCH.
B10	→		RELEASE COMPLETE	If the UE does not support any basic service on TCH. cause #88.
11	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.8.3.5 Test requirement

At step 8 the UE shall not send any layer 3 message.

After step 9:

The UE shall send CALL CONFIRMED message if the UE supports a basic service on TCH.

The UE shall send RELEASE COMPLETE message if the UE does not support a basic service on TCH.

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

Tdoc T1-020303

3GPP TSG-T WG1 SWG SIG #23
Lund, Sweden, 21-23 May 2002

T1S-020266r2

CR-Form-v5.1

CHANGE REQUEST

⌘ **34.123-1** CR **178** ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Modifications and corrections of GMM test case
Source:	⌘	SONY, Nokia

Work item code:⌘	TEI	***Date:*** ⌘	21 May 2002

Category: ⌘ **F**   ***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	It is necessary;

- to correct some test cases based on the changes in TS51.010-1 clause 44.

- to introduce new test cases in order to keep consistency with the changes in TS24.008.

- to correct some test cases in order to keep consistency with the changes in TS24.008.

- to change some test cases with other reasons.

Summary of change: ⌘	**1.** Corrections based on the changes in TS51.010.

1.1 For subclause 12.2.2.2 "Combined PS attach / PS only attach accepted"

- In order to avoid a Routing Area Update procedure after step17 and step 33, T3212 and T3302 are set to 6 minutes.

- In Test Procedure 3, the Registration procedure in step 15 has been made optional instead of mandatory. Also the paging in steps 17 - 23 are optional.

1.2 For subclause 12.2.2.8 "Combined PS attach / abnormal cases / attempt counter check / miscellaneous reject causes"

- The comment in step17 of the Expected sequence is corrected. According to the core specification[2] (TS24.008 clause 4.7.3.1.5(for GMM context), 4.7.3.2.5(for MM context)), the UE is allowed to initiate a Location Update procedure in network

operation mode 1.

1.3 For subclause 12.4.3.4 "Periodic routing area updating / no cell available"

- In order to avoid a periodic location area updating procedure, test procedure is corrected.

1.4 For subclause 12.2.1.6 "PS attach / abnormal cases / access barred due to access class control"

- The comments in step 6 of the Expected sequence for Test procedure 1 and in step7 of the Expected sequence for Test procedure 2 are corrected because this test is applicable for either non-auto attach UE or auto attach UE.

1.5 For subclause 12.4.1.4a "Routing area updating / rejected / location area not allowed"

- The Expected sequence is corrected because test is applicable for either non-auto attach UE or auto attach UE.

1.6 For subclause 12.6.1.2 "Authentication rejected be the network "

- A detach procedure is added after step22 of the Expected sequence because this procedure is missing.

- RAI-4 should be replaced with RAI-2.

1.7 For subclause 12.4.2.3 "Combined routing area updating / RA only accepted"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation for test procedure 1 and 2 are corrected as follows.

- In Test Procedure 2, it has been specified for the initial conditions of the SS that T3212 shall be set to 6 minutes.

- In Test Procedure 2, the Registration procedure in step 55 has been made optional instead of mandatory. Also the paging in steps 56 - 62 are optional.

1.8 For subclause 12.2.1.7 "PS attach / abnormal cases / change of cell into new routing area"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.9 For subclause 12.3.1.8 "PS detach / abnormal cases / change of cell into new routing area"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.10 For subclause 12.4.1.2 "Routing area updating / rejected / IMSI invalid / illegal ME"

- In order to avoid a unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.11 For subclause 12.4.1.3 "Routing area updating / rejected / UE identity cannot be derived by the network"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.12 For subclause 12.4.1.5 "Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

- Step 29 has been removed, and the comment for step 28 has been clarified for UE in Operation mode A which must perform an IMSI Detach either before or after the PS Detach.

1.13 For subclause 12.4.1.6 "Routing area updating / abnormal cases / change of cell into new routing area"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.14 For subclause 12.4.1.7 "Routing area updating / abnormal cases / change of cell during routing area updating procedure

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.15 For subclause 12.4.1.8 "Routing area updating / abnormal cases / P-TMSI reallocation procedure collision"

- In order to avoid an unnecessary Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.16 For subclause 12.4.2.4 "Combined routing area updating / rejected / PLMN not allowed"

- In order to avoid an un Location Update procedure before the UE performs an Attach Request or a RAU request procedure, the setting of cell activation and deactivation is corrected as follows.

1.17 For subclause 12.4.2.6 "Combined routing area updating / abnormal cases / access barred due to access class control"

- In order to avoid an unnecessary Location Update procedure before the UE performs a RAU request procedure, the setting of cell activation and deactivation for test procedure 1 and 2 is corrected as follows.

1.18 For subclause 12.3.1.4 "PS detach / abnormal cases / GMM common procedure collision"

- The UE shall re-transmit the PS Detach on expiry of Timer T3321. T3321 is 15 seconds. Therefore it should be clarified that Steps 8x, 9x, 10x and 11, of the expected sequence, shall be completed within GMM Timer T3321.

- Sequence counter numbering corrected in steps 9A and 10A of the Expected Sequence.

- In relation with the above-mentioned correction, Test procedure is corrected.

2. Introduction of new test cases and corrections, according to the changes in TS24.008.

2.1 Introduction of the new test cases according to the changes in TS24.008

In order to keep consistency with the changes[1][2][3] of the core specification[4], the following test cases are introduced.

- 12.4.1.1b "Routing area updating / accepted / Signalling connection re-establishment"

- 12.2.1.5c "PS attach / rejected / Location area not allowed "

- 12.2.1.5d "PS attach / rejected / PS services not allowed in this PLMN "

- 12.2.2.7c "Combined PS attach / rejected / Roaming not allowed in this location area "

- 12.2.2.7d "Combined PS attach / rejected / PS services not allowed in this PLMN "

- 12.3.2.7 "PS detach / rejected / Roaming not allowed in this location area"

- 12.4.1.4c "Combined routing area updating / rejected / PS services not allowed in this PLMN "

- 12.4.1.4d "Routing area updating / rejected / Roaming not allowed in this location area"

- 12.4.2.5c "Combined routing area updating / rejected / Location area not allowed "

- 12.4.2.5d "Combined routing area updating / rejected / PS services not allowed in this PLMN "

- 12.9.7c "Service Request / rejected / Roaming not allowed in this location area"

2.2 Corrections according to the changes in TS24.008

2.2.1 Modification for each test case

In order to keep consistency with the changes[2][3] of the core specification[4], conformance requirement, initial condition and the expected sequence in the following test cases are modified.

- 12.2.1.5b "PS attach / rejected / No Suitable Cells In Location Area"

- 12.2.2.7a "Combined PS attach / rejected / location area not allowed"

- 12.2.2.7b "Combined PS attach / rejected / No Suitable Cells In Location Area"

- 12.4.1.4a "Routing area updating / rejected / location area not allowed"

- 12.4.1.4b "Routing area updating / rejected / No Suitable Cells In Location Area"

- 12.4.2.5a "Combined routing area updating / rejected / roaming not allowed in this location area"

- 12.4.2.5b "Combined routing area updating / rejected / No Suitable Cells In Location Area"

- 12.9.7b "Service Request / rejected / No Suitable Cells In Location Area"

3. Other changes

3.1 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".

3.2 Introduction of the MM IMSI attach procedure in the Expected sequence

MM IMSI attach procedure is introduced into the Expected sequence in the following subclauses.

When the network is in network operation mode II and the UE is in UE operation mode A, the UE performs MM IMSI attach procedure after the UE is powered up or switched on.

- 12.2.1.2 "PS attach / rejected / IMSI invalid / illegal UE"

- 12.2.1.4 "PS attach / rejected / PLMN not allowed"

- 12.2.1.5a "PS attach / rejected / roaming not allowed in this location area"

- 12.3.2.2 "PS detach / rejected / IMSI invalid / PS services not allowed"

- 12.4.1.2 "Routing area updating / rejected / IMSI invalid / illegal ME"

- 12.4.1.4a "Routing area updating / rejected / location area not allowed"

- 12.6.1.2 "Authentication rejected by the network"

3.3 For subclause 12.4.3.3 "Periodic routing area updating / no cell available / network mode I"

Cell activation and deactivation in step1, step7 and step9 is corrected for the following reasons.

1. In order to distort the PS radio contact (before T3312 timeout),

- at step1, the SS should be set cell A to "Serving cell" and should be set cell B to "non-suitable cell".

- at step7, the SS should be set cell A to "non-suitable cell".

2. In order to establish the PS radio contact again (after T3312 timeout),

- at step9, the SS should be set cell B to "Serving cell".

3.4 For subclause 12.2.2.2 "Combined PS attach / PS only attach accepted" test procedure 2

- In order to simplify the test scenario, Test procedure 2 is divided into two test procedures as follows, depending on the option "Automatic MM IMSI attach procedure for UE operation mode A".

- Test procedure 2: The UE supports UE operation mode A and does not support automatic MM IMSI attach.

- Test procedure 3: The UE supports UE operation mode A and automatic MM IMSI attach.

3.5 For subclause 12.9.1 "Service Request Initiated by UE Procedure"

- ~~Security mode control procedure is introduced after step9 of the Expected sequence because this procedure is missing.~~

The Correction, in this subclause, is merged in T1S-020200r2.

3.6 For subclause 12.9.2 "Service Request Initiated by Network Procedure"

- ~~Security mode control procedure is introduced after step9 of the Expected sequence because this procedure is missing.~~

The Correction, in this subclause, is merged in T1S-020200r2.

3.7 For subclause 12.9.7a "Service Request / rejected / No PDP context activated"

- Authentication procedure, PS call establishment procedure and a radio bearer release procedure are introduced before service request procedure because these procedures are missing.

- In relation with the above-mentioned correction, Test requirement is corrected

3.8 For subclause 12.9.8 "Service Request / Abnormal cases / Access barred due to access class control"

- Security mode control procedure is inserted after step11 of the Expected sequence because this procedure is missing.

3.9 For subclause 12.4.1.4b "Routing area updating / rejected / No Suitable Cells In Location Area"

- The comment in the Expected sequence is corrected.

3.10 For subclause 12.4.1.1a "Routing area updating / accepted"

- In relation to the introduction of the new test cases (12.4.1.1b "Routing area updating / accepted / Signalling connection re-establishment"), clause number for "Routing area updating / accepted" is corrected.

3.11 For subclause 12.1 "Applicability, default conditions and default messages"

- RAI-11(MCC1/MNC3/LAC1/RAC1) and RAI1-2(MCC1/MNC1/LAC2/RAC2) are added because those RAIs are missing.

Reference:

[1] TS 24.008 CR485   Mapping of NAS procedures to RRC Establishment Causes

[2] TS24.008 CR521   Impact of regional roaming restrictions on the GMM context

[3] TS24.008 CR522   Conditions for the deletion of the equivalent PLMN list

[4]TS28.008   Mobile radio interface layer 3 specification; Core Network
                             Protocols - Stage 3 (Release 1999)

Consequences if not approved:	⌘	Inconsistency with the core specification and editorial mistakes are left.

Clauses affected:	⌘	Various		

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 Elementary procedure for Packet Switched Mobility Management

12.1 Applicability, default conditions and default messages

All test cases for PS mobility management apply for all PS mobiles unless otherwise stated in a specific test. Within each test case, the ICS statement indicates whether the test shall be performed for mobiles that can only operate in mode - class A, only in mode - class C , or in both mode - class A and C. For some procedures, the mobile class is of no importance.

Note that only the layer 3 messages are described in the document. The mapping of the layer 3 messages to lower layers and the use of logical channels is not described in the present document.

The terms 'PS/CS mode of operation' and 'PS mode of operation' are not used in the present document with some exceptions. Instead the terms 'UE operation mode A' and 'UE operation mode C' are used.

The default conditions and default message contents not specified in this clause must be set as in "PS default conditions"

Below is a list of the RAI values and the corresponding RAC, LAC and MCC used in the test cases:

RAI-1: MCC1/MNC1/LAC1/RAC1   (Used if only one cell)

RAI-2: MCC2/MNC1/LAC1/RAC1

RAI-3: MCC1/MNC1/LAC2/RAC1

RAI-4: MCC1/MNC1/LAC1/RAC2

RAI-5: MCC1/MNC1/LAC1/RAC3

RAI-6: MCC2/MNC1/LAC2/RAC1

RAI-7: MCC2/MNC1/LAC1/RAC2

RAI-8: MCC1/MNC2/LAC1/RAC1

RAI-9: MCC1/MNC2/LAC2/RAC1

RAI10: MCC1/MNC2/LAC1/RAC2

RAI-11: MCC1/MNC3/LAC1/RAC1

RAI-12: MCC1/MNC1/LAC2/RAC2

If the User Equipment initial condition specifies that the mobile has a valid IMSI but the initial condition does not mention P-TMSI, than that shall be interpreted as that the mobile has no valid P-TMSI.

The tests are based on 3GPP TS 24.008.

12.2 PS attach procedure

This procedure is used to indicate for the network that the IMSI is available for traffic by establishment of a GMM context.

12.2.1 Normal PS attach

The normal PS attach procedure is a GMM procedure used by PS UEs of UE operation mode A or C to IMSI attach for PS services only.

12.2.1.1 PS attach / accepted

12.2.1.1.1 Definition

12.2.1.1.2 Conformance requirement

1) If the network accepts the PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.3.1

12.2.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed.

12.2.1.1.4 Method of test

Initial condition

System Simulator:

    One cell operating in network operation mode II.

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 (see ICS). If UE operation mode C not supported, goto step 26.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
6a	->		RRC CONNECTION REQUEST	
6b	<-		RRC CONNECTION SETUP	
6c	->		RRC CONNECTION SETUP COMPLETE	
7	->		SERVICE REQUEST	Service type = "paging response"
7a	<-		RRC CONNECTION RELEASE	
7b	->		RRC CONNECTION RELEASE COMPLETE	
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
10	UE			The UE is powered up or switched on and initiates an attach (see ICS).
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
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	<-		GMM INFORMATION	Message sent with P-TMSI-1
14b	->		GMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97
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).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
19	UE			The UE is powered up or switched on and initiates an attach (see ICS).
20	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
21	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
22	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. PAGING TYPE 1 (used for NW-mode II).
22a	->		RRC CONNECTION REQUEST	

Step	Direction		Message	Comments
	UE	SS		
22b	<-		RRC CONNECTION SETUP	
22c	->		RRC CONNECTION SETUP COMPLETE	
23	->		SERVICE REQUEST	Service type = "paging response"
23a	<-		RRC CONNECTION RELEASE	
23b	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
26	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 25.

Specific message contents

None.

12.2.1.1.5 Test requirements

At step3, 11 and 20, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Mobile identity in the ATTACH REQUEST message and on the Mobile identity in the ATTACH ACCEPT message.

Case 1) The Mobile identity in the ATTACH REQUEST message is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

At step5, UE shall:

- acknowledge the P-TMSI by sending the ATTACH COMPLETE message.

Case 2) The Mobile identity in the ATTACH REQUEST message is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the new P-TMSI.

At step13, UE shall:

- acknowledge the new P-TMSI by sending the ATTACH COMPLETE message.

At step23, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.1.2 PS attach / rejected / IMSI invalid / illegal UE

12.2.1.2.1 Definition

12.2.1.2.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal UE', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal UE' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'Illegal UE', the User Equipment shall delete the LAI.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'illegal UE'.

12.2.1.2.4 Method of test

Initial condition

System Simulator:

> Three cells (not simultaneously activated), cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in
>
> MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
>
> All three cells are operating in network operation mode II (in case of UE operation mode A).

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 (only if mode C not supported)
>
> Switch off on button Yes/No
>
> Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal UE'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell ". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'Illegal UE'.
6		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)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			The UE initiates an attach by MMI or by AT command.
10	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
11		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
12	UE			Cell C is preferred by the UE.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			The UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
17	UE			The UE is powered up or switched on.
18	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
19	UE			The UE initiates an attach (see ICS).
20	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
21	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
22	->		ATTACH COMPLETE	

23	UE		The UE is switched off or power is removed (see ICS).
24	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
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.

12.2.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, 10, 13 and 15, UE shall:

- not send the ATTACH REQUEST message to SS, even if there is an instruction of attach request from MMI or from AT command.

At step20, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

12.2.1.3 PS attach / rejected / IMSI invalid / PS services not allowed

12.2.1.3.1 Definition

12.2.1.3.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS services not allowed' (no valid PS-subscription for the IMSI).

12.2.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode II.

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

      USIM removal possible without powering down Yes/No

      Switch off on button Yes/No

      Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
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). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause = 'PS services not allowed'
6	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)
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
10	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
16				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)
17	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.
NOTE:			The definitions for "~~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.

12.2.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, UE shall:

- not perform a PS attach procedure.

At step11, after the UE is switched on or a USIM is replaced, UE shall:

- perform the PS attach procedure.

12.2.1.4   PS attach / rejected / PLMN not allowed

12.2.1.4.1   Definition

12.2.1.4.2   Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

    1.1   not perform PS attach when switched on in the same routing area or location area.

    1.2   not perform PS attach when in the same PLMN and when that PLMN is not selected manually.

    1.3   delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

    1.4   store the PLMN in the 'forbidden PLMN' list.

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall perform PS attach when a new PLMN is entered.

3) If the network rejects a PS attach procedure from the User Equipment with the cause 'PLMN not allowed' and if after that the PLMN from which this rejection was received, is manually selected, the User Equipment shall perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.4.3   Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PLMN not allowed'.

12.2.1.4.4   Method of test

12.2.1.4.4.1   Test procedure 1

Initial condition

System Simulator:

    Four cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2).
    All four cells are operating in network operation mode II (in case of UE operation mode A). The PLMN of the four cells should NOT be that of the UE Home PLMN.

User Equipment:

    The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-8. UE is Idle Updated on cell A.

Related ICS/IXIT statements

       Support of PS service   Yes/No
       UE operation mode C   Yes/No
       UE operation mode A   Yes/No (only if mode C not supported)
       Switch off on button Yes/No
       Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same routing area or location area and performs PS attach only when a new PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell D to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-8
5		<-	ATTACH REJECT	GMM cause = 'PLMN not allowed'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
7	UE			The following messages are sent and shall be received on cell B. The UE is switched off.
8	SS			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)
9	UE			The UE is powered up or switched on.
10	UE			Cell B is preferred by the UE.
11	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
12	SS			The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
15	SS			The following messages are sent and shall be received on cell D. Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
16	UE			Cell D is preferred by the UE.
17	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
18	UE			The UE initiates an attach automatically, by MMI or by AT command.
19		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
20		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2

21	->	ATTACH COMPLETE	
22	UE		The UE is switched off or power is removed (see ICS).
23	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

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".

12.2.1.4.4.2   Test procedure 2

Initial condition

System Simurator:

One cell operating in network operation mode II: MCC2/MNC1/LAC1/RAC1 (RAI-2). The PLMN of the cell should NOT be that of the Mobile Station Home PLMN.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-2. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode C Yes/No
UE operation mode A Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PLMN not allowed'. The subscribers access rights is changed to allow PS attach. Then the PLMN from which this rejection was received is manually selected and the SS check that a PS attach is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C or A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'PLMN not allowed'
5	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
6	UE			The current PLMN is selected manually.
7	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
8	UE			The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
10	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.2.1.4.5   Test requirements

Test requirements for test procedure 1

At step4, when the UE is powered on or switched on, UE shall:

-    initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

-    not perform PS attach procedure.

UE shall perform the following actions depending on the PLMN or the routing area or the location area

    Case 1) UE is in the same routing area or location area when the power is switched on,

    At step11, UE shall:

-    not perform PS attach procedure.

    Case2) UE is in the same PLMN, and this PLMN is not selected manually

    At step14, UE shall:

-    not perform PS attach procedure.

Case3) UE is in a new PLMN.

At step19, UE shall:

- perform the PS attach procedure.

Test requirements for test procedure 2

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, UE shall:

- not perform PS attach procedure.

At step9, when the UE is in the new PLMN, and this PLMN is selected manually, UE shall

- perform the PS attach procedure.

12.2.1.5a   PS attach / rejected / roaming not allowed in this location area

12.2.1.5a.1   Definition

12.2.1.5a.2   Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment shall:

   1.1   not perform PS attach when in the same location area.

   1.2   delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.3   store the LA in the 'forbidden location areas for roaming' list.

   1.4   perform PS attach when a new location area is entered.

   1.5   Periodically search for its HPLMN.

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

3) The UE shall be capable of storing at least 6 entries in the list of 'Forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5a.3   Test purpose

Test purpose 1

To test that on receipt of a rejection using the 'roaming not allowed in this location area' cause code, the UE ceases trying to attach on that location area. Successful PS attach procedure is possible in other location areas.

Test purpose 2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

Test purpose 3

To test that at least 6 entries can be held in the list of 'forbidden location areas for roaming' (the requirement in 3GPP TS 24.008 is to store at least 10 entries. This is not fully tested by the third procedure).

Test purpose 4

To test that if a cell of the Home PLMN is available then the UE returns to it in preference to any other available cell.

12.2.1.5a.4   Method of test

12.2.1.5a.4.1   Test procedure 1

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in

MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN) and cell C in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN).

All three cells are operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-2.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
UE operation mode A   Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. A new attempt for a PS attach is not possible. Successful PS attach / detach procedures are performed in another location area. A new attempt for a PS attach is performed in the 1st location area. This attempt shall not succeed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
7		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)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
11		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
12		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6
13		->	ATTACH COMPLETE	
14	UE			The UE initiates a PS detach (without power off) by MMI or by AT command .
15		->	DETACH REQUEST	Detach type = 'normal detach, PS detach'
16		<-	DETACH ACCEPT	
17		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE			Cell C is preferred by the UE.
19	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds). The UE is switched off or power is removed (see ICS)
20	UE			UE is switched off.
21		SS		Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)

22	UE		The UE is set in UE operation mode A if supported (see ICS) and the test is repeated from step 2 to step 20.
NOTE:	The definitions for "~~Off cell~~Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

12.2.1.5a.4.2   Test procedure 2

Initial condition

System Simulator:

>   One cell in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN) operating in network operation mode II.

User Equipment:

>   The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-2.

Related ICS/IXIT statements

>   Support of PS service   Yes/No
>   UE operation mode C   Yes/No
>   UE operation mode A   Yes/No (only if mode C not supported)
>   Switch off on button Yes/No
>   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 s and switched on again. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

If USIM removal is possible without switching off: The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS check that a PS attach is possible on the cell on which the PS attach had been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			If UE operation mode C is supported, the UE is set in UE operation mode C (see ICS). If UE operation mode C is not supported, the UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
4	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
5	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
6	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
7	UE			The UE is powered up or switched on and initiates an attach (see ICS).
8	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI
9	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
10	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

12.2.1.5a.4.3 Test procedure 3

Initial condition

System Simulator:

Six cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-3, Not HPLMN), cell C in MCC2/MNC1/LAC3/RAC1 (Not HPLMN), cell D in MCC2/MNC1/LAC4/RAC1 (Not HPLMN), cell E in MCC2/MNC1/LAC5/RAC1 (Not HPLMN), cell F in MCC2/MNC1/LAC6/RAC1 (Not HPLMN).
All six cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-2.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
UE operation mode A   Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area'. This is done for 6 different location areas. Then the SS checks that the UE does not attempt to perform an attach procedure on the non-allowed location areas.

Different types of UE may use different methods to periodically clear the list of forbidden areas (e.g. every day at 12am) for roaming. If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell D to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell F to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
5	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
7		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)
8	UE			Cell B is preferred by the UE.
9	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A. Parameter mobile identity is IMSI.
10	UE			The UE initiates an attach automatically, by MMI or by AT command.
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
12	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
13	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
14		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
15	UE			Cell C is preferred by the UE.
16	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.

Step	Direction UE	Direction SS	Message	Comments
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
20	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
21	SS			The following messages are sent and shall be received on cell D. Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
22	UE			Cell D is preferred by the UE.
23	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
24	UE			The UE initiates an attach automatically, by MMI or by AT command.
25	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
26	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
27	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
28	SS			The following messages are sent and shall be received on cell E. Set the cell type of cell D to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell E to the "Serving cell". (see note)
29	UE			Cell E is preferred by the UE.
30	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
31	UE			The UE initiates an attach automatically, by MMI or by AT command.
32	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
33	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
34	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
35	SS			The following messages are sent and shall be received on cell F. Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell F to the "Serving cell". (see note)
36	UE			Cell F is preferred by the UE.
37	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
38	UE			The UE initiates an attach automatically, by MMI or by AT command.
39	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
40	<-		ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
41	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
				The following messages are sent and shall be received on cell E.

Step	Direction UE	Direction SS	Message	Comments
42		SS		Set the cell type of cell E to the "Serving cell". Set the cell type of cell F to the "~~Off cell~~Non-Suitable cell". (see note)
43		SS		Cell E is preferred by the UE.
44	UE			The UE initiates an attach automatically, by MMI or by AT command.
45	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
46		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell C to the "Serving cell". Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell". (see note)
47		SS		Cell C is preferred by the UE.
48	UE			The UE initiates an attach automatically, by MMI or by AT command.
49	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
50		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
51		SS		Cell A will be preferred by the UE.
52	UE			The UE initiates an attach automatically, by MMI or by AT command.
53	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
NOTE:				The definitions for "~~Off cell~~Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

12.2.1.5a.4.4   Test procedure4

Initial condition

System Simulator:

    Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (not HPLMN, RAI-2) and cell B in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1).
    Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

    The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-2.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode C   Yes/No
    UE operation mode A   Yes/No (only if mode C not supported)
    Switch off on button Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming not allowed in this area A second cell belonging to the HPLMN is activated. It is checked that the UE returns to its HPLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
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)
8	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
9	UE			The UE initiates an attach automatically, by MMI or by AT command.
10		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
11		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
12		->	ATTACH COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5a.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform the PS attach procedure.

At step11, when the new location area is entered, UE shall:

- perform the PS attach procedure

At step19, when the rejected location area is entered, UE shall

- not perform PS attach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step9, when the UE is switched off or USIM is replaced, UE shall:

- perform the PS attach procedure.

Test requirements for Test procedure3

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, 13, 20, 27, 34 and 41, after the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step11, 18, 25, 32 and 39 , UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step45, 49 and 53, UE shall:

- not perform PS attach procedure.

Test requirements for Test procedure4

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Roaming not allowed in this area', UE shall:

- not perform PS attach procedure.

At step10, when a new location area is entered, UE shall:

- perform the PS attach procedure.

12.2.1.5b PS attach / rejected / No Suitable Cells In Location Area

12.2.1.5b.1 Definition

12.2.1.5b.2 Conformance requirement

(1) If the network rejects a PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.1 not perform PS attach when in the same location area.

1.2 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

1.3 store the LA in the 'forbidden location areas for roaming' list.

1.4 not delete the list of "equivalent PLMNs".

~~1.4~~1.5 perform PS attach when a new location area is entered.

Reference

3GPP TS 24.008 clauses 4.7.3.1.

12.2.1.5b.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'No Suitable Cells In Location Area'.

12.2.1.5b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2~~1~~/MNC1/LAC1~~2~~/RAC1 (RAI-2~~3~~), cell C in MCC2/MNC1/LAC2~~1~~/RAC1 (RAI-6~~2~~)

All three cells are operating in network operation mode II.

The PLMN contains Cell B and C is equivalent to the PLMN that contains Cell A.

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 A   Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN and shall perform PS attach procedure in that cell.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
2a	UE		Registration on CS	See TS 34.108 This is applied only in case of UE operation mode A.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
5		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell CB.
6	UE		Registration on CS	See TS 34.108
7	UE			The UE initiates an attach automatically, by MMI or by AT command.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
9	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-62
10	->		ATTACH COMPLETE	
11	UE			The UE is switched off or power is removed (see ICS).
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.2.1.5b.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.2.1.5c   PS attach / rejected / Location area not allowed

12.2.1.5c.1   Definition

12.2.1.5c.2   Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' the User Equipment shall:

   1.1   delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2   set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3   reset the attach attempt counter.

   1.4   store the LAI in the list of "forbidden location areas for regional provision of service".

   1.1   perform a cell selection.

   1.2   not delete the list of "equivalent PLMNs".

2) If the network rejects a PS attach procedure from the User Equipment with the cause 'Location area not allowed' and if the User Equipment is IMSI attached via MM procedures the User Equipment shall:

   2.1 set the update status to U3 ROAMING NOT ALLOWED.

   2.2 delete any TMSI, LAI and ciphering key sequence number.

   2.3 reset the location update attempt counter.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5c.3   Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Location area not allowed'.

12.2.1.5c.4   Method of test

12.2.1.5c.4.1   Test procedure 1

Initial condition

System Simulator:

   Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
   All three cells are operating in network operation mode II (in case of UE operation mode A).

   The PLMN contains Cell B and C is equivalent to the PLMN that contains Cell A.

User Equipment:

   The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

Related ICS/IXIT statements

   Support of PS service   Yes/No
   UE operation mode C   Yes/No
   UE operation mode A   Yes/No (only if mode C not supported)

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Location area not allowed'. The SS checks that the UE does not perform MM IMSI attach while in the same location area and performs PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction UE | SS	Message	Comments
	SS		The following messages are sent and shall be received on cell A.
1	UE		The UE is set in UE operation mode A (see ICS).
2	SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note) The SS configures power level of each Cell as follows. Cell A > Cell B > Cell C
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE	Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
5	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
6	<-	ATTACH REJECT	GMM cause = 'Location area not allowed'
7	UE		The UE performs cell selection. The following messages are sent and shall be received on cell C.
8	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
9	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6
10	->	ATTACH COMPLETE	
11	UE		No MM IMSI attach request sent to SS (SS waits 30 seconds).
12	UE		The UE is switched off or power is removed (see ICS).
13	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.1.5c.4.2   Test procedure 2

Initial condition

System Simulator:

Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-6). All two cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
UE operation mode A   Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Location area not allowed'. The SS checks that the UE performs MM IMSI attach and performs PS attach when a new equivalent PLMN is entered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
6		<-	ATTACH REJECT	GMM cause = 'Location area not allowed'
7	UE			The UE performs cell selection procedure. The following messages are sent and shall be received on cell C.
8			Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
9	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
10		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5c.5 Test requirements

Test requirement for test procedure 1

At step5, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform cell selection.

At step8, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step14, UE shall:

- not perform MM IMSI attach

Test requirement for test procedure 2

At step5, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform cell selection.

At step8, UE shall:

- perform MM IMSI attach.

At step9, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

12.2.1.5d PS attach / rejected / PS services not allowed in this PLMN

12.2.1.5d.1 Definition

12.2.1.5d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS service not allowed in this PLMN' the User Equipment shall:

1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

1.4 perform a PLMN selection instead of a cell selection.

2) If the UE is in UE operation mode A and the network is in network operation mode II the User Equipment shall:

2.1 be still IMSI attached for CS services in the network..

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.5d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS service not allowed in this PLMN'.

12.2.1.5d.4 Method of test

Initial condition

System Simulator:

Three cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC2 (RAI-2).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
UE operation mode A   Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

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

Expected Sequence

Step	Direction UE	SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode A (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Suitable neighbour cell ". Set the cell type of cell C to the " Suitable neighbour cell " (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Mobile identity = TMSI-1
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature
6	<-		ATTACH REJECT	GMM cause = 'PS service not allowed in this PLMN'
7	UE			The UE performs PLMN selection. The following messages are sent and shall be received on cell C.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
9	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-7
10	->		ATTACH COMPLETE	
11	UE		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
12	->		RRC CONNECTION REQUEST	
13	<-		RRC CONNECTION SETUP	
14	->		RRC CONNECTION SETUP COMPLETE	
15	->		PAGING RESPONSE	
16	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
17	->		RRC CONNECTION RELEASE COMPLETE	
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.2.1.5d.5   Test requirements

At step5, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform PLMN selection.

At step8, UE shall:

- perform PS attach procedure with Mobile identity = IMSI to the equivalent cell.

At step12, UE shall:

- respond the Paging for CS domain service.

12.2.1.6 PS attach / abnormal cases / access barred due to access class control

12.2.1.6.1 Definition

12.2.1.6.2 Conformance requirement

1) The UE shall not perform PS attach procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the PS attach procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (Cell is changed).

12.2.1.6.4 Method of test

12.2.1.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred.

System Simulator:

    One cell operating in network operation mode II.
    Access class x barred.

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 SS indicates access class x barred. A PS attach procedure is not performed.

The SS indicates that access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 12.
3	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
4	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
5		SS		The access class x is not barred anymore.
6	UE			The UE ~~automatically~~ initiates a PS attach either automatically or manually (see ICS).
7	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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	
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
12		SS		The SS is set in network operation mode II.
13	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 11.

12.2.1.6.4.2   Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell A.

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred.
Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid P-TMSI-2, P-TMSI-2 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 SS indicates access class x barred. A PS attach procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A PS attach procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is programmed with access class x.
		SS		The following messages are sent and shall be received on cell A.
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is set in UE operation mode C (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			The UE ~~automatically~~ initiates an attach either automatically or manually (see PICS).
8		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
9		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
10		->	ATTACH COMPLETE	
11	UE			The UE is switched off or power is removed (see ICS).
12		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.2.1.6.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step7, when the UE access class x is granted, UE shall:

initiate the PS attach procedure.

Test requirements for Test procedure2

At step5, when the UE access class x is barred, UE shall:

- not perform a PS attach procedure.

At step8, when the serving cell is changed, UE shall:

- initiate the PS attach procedure.

12.2.1.7 PS attach / abnormal cases / change of cell into new routing area

12.2.1.7.1 Definition

12.2.1.7.2 Conformance requirement

When a change of cell into a new routing area is performed before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and re-initiate it immediately.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.7.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).

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 (only if mode C not supported)

Switch off on button   Yes/No

Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure. The ATTACH ACCEPT message is delayed from the SS. The UE performs a cell reselection to a cell in a new routing area. The UE shall re-initiate a PS attach procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	SS			No response to the ATTACH REQUEST message is given by the SS.
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note) Cell B is preferred by the UE.
7	UE			The UE automatically re-initiates the attach in the new cell.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
9	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-4
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
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.

12.2.1.7.5   Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected sequence.

At step8, when a change of cell into a new routing area is performed before ATTACH ACCEPT message or ATTACH REJECT message is received by the UE, UE shall:

- abort the PS attach procedure and re-initiate the PS attach procedure immediately with new information elements.

12.2.1.8   PS attach / abnormal cases / power off

12.2.1.8.1   Definition

12.2.1.8.2   Conformance requirement

When power is switched off before ATTACH ACCEPT message is received by the UE, the UE shall abort the PS attach procedure and perform a PS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.

12.2.1.8.3   Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.8.4   Method of test

Initial condition

System Simulator:

>   One cell operating in network operation mode II.

User Equipment:

>   The UE has a valid P-TMSI-1, 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 is switched off after initiating an attach procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 7.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4		SS		No response to the ATTACH REQUEST message is given by the SS.
5	UE			The UE is powered off and initiates a PS detach (with power off) by
6	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
7	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 6.

Specific message contents

None.

12.2.1.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when power is switched off before ATTACH ACCEPT message is received, UE shall:

- abort the PS attach procedure and perform the PS detach procedure.

12.2.1.9 PS attach / abnormal cases / PS detach procedure collision

12.2.1.9.1 Definition

12.2.1.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message, the UE shall terminate the PS attach procedure and continue with the PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message, the UE shall ignore the PS detach procedure and continue with the PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

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 (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (any cause except re-attach). The UE shall terminate the PS attach procedure and continue with the PS detach procedure**.**

The UE initiates a PS attach procedure. The SS does not answer the PS attach procedure, but initiates a PS detach procedure (cause re-attach). The UE shall ignore the PS detach procedure and continue with the PS attach.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4		SS		The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5	<-		DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7	UE			The UE initiates the attach procedure by MMI or AT command.
8	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
9		SS		The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach required'
11	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure.
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.2.1.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type in the DETACH REQUEST message.

Case1) Detach type = 're-attach not required' GMM cause is not re-attach

At step6, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- terminate the PS attach procedure and continue with the PS detach procedure.

Case2) Detach type = 're-attach required'

At step11, when the DETACH REQUEST message is received by the UE while waiting for an ATTACH ACCEPT message, UE shall:

- ignore the PS detach procedure and continue with the PS attach procedure.

12.2.2   Combined PS attach

12.2.2.1   Combined PS attach / PS and non-PS attach accepted

12.2.2.1.1   Definition

12.2.2.1.2   Conformance requirement

1) If the network accepts the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI, the UE shall acknowledge the P-TMSI and continue communication with the P-TMSI.

2) If the network accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

3) If the network accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI, the UE shall continue communication with the previously used P-TMSI.

4) If the network accepts the combined PS attach procedure and determines that IMSI shall be used in CS operations, the UE shall continue communication with the IMSI for CS operations.

5) If the network accepts the combined PS attach procedure and determines that a TMSI shall be used in CS operations, the UE shall continue communication with the TMSI for CS operations.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.1.3   Test purpose

To test the behaviour of the UE if the network accepts the PS attach procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is allocated;

2) P-TMSI / P-TMSI signature is reallocated;

3) Old P-TMSI / P-TMSI signature is not changed;

4) Mobile terminating CS call is allowed with IMSI;

    5) Mobile terminating CS call is not allowed with TMSI.

12.2.2.1.4 Method of test

Initial condition

System Simulator:

    One cell operating in network operation mode I.

User Equipment:

    The UE has a valid IMSI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

    1) The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. The UE acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used.

    2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

    3) The UE is PS paged in order to verify that the new P-TMSI is used for PS services.

    4) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS allocates a new P-TMSI and returns ATTACH ACCEPT message with the new P-TMSI and a new TMSI. The UE acknowledge the P-TMSI and the TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the new TMSI is used. The UE is CS paged in order to verify that the new TMSI is used for CS services.

    5) The UE is PS paged in order to verify that the new P-TMSI is used for PS services. The UE will not answer signalling addressed to the old P-TMSI.

    6) The UE sends an ATTACH REQUEST message with identity P-TMSI. The SS accepts the P-TMSI and returns ATTACH ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the previously used P-TMSI.

    7) The UE is PS paged in order to verify that the previously used P-TMSI is used for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity =IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
7	->		RRC CONNECTION REQUEST	
8	<-		RRC CONNECTION SETUP	
9	->		RRC CONNECTION SETUP COMPLETE	
10	->		PAGING RESPONSE	Mobile identity = IMSI
11	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
12	->		RRC CONNECTION RELEASE COMPLETE	
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services
13a	->		RRC CONNECTION REQUEST	
13b	<-		RRC CONNECTION SETUP	
13c	->		RRC CONNECTION SETUP COMPLETE	
14	->		SERVICE REQUEST	service type = "paging response"
14a	<-		RRC CONNECTION RELEASE	
14b	->		RRC CONNECTION RELEASE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
17	UE			The UE is powered up or switched on and initiates an attach (see ICS).
18	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature TMSI status = no valid TMSI available Routing area identity = RAI-1
19	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
20	->		ATTACH COMPLETE	
21	<-		GMM INFORMATION	
21b	->		GMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97
22	<-		PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services.
23	->		RRC CONNECTION REQUEST	
24	<-		RRC CONNECTION SETUP	
25	->		RRC CONNECTION SETUP COMPLETE	
26	->		PAGING RESPONSE	Mobile identity = TMSI-1

Step	Direction UE | SS	Message	Comments
27	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28	->	RRC CONNECTION RELEASE COMPLETE	
29	<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services
29a	->	RRC CONNECTION REQUEST	
29b	<-	RRC CONNECTION SETUP	
29c	->	RRC CONNECTION SETUP COMPLETE	
30	->	SERVICE REQUEST	service type = "paging response"
30a	<-	RRC CONNECTION RELEASE	
30b	->	RRC CONNECTION RELEASE COMPLETE	
31	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging for PS services
32	UE		No response from the UE to the request. This is checked for 10 seconds.
33	UE		The UE is switched off or power is removed (see ICS).
34	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
35	UE		The UE is powered up or switched on and initiates an attach (see ICS).
36	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
37	<-	ATTACH ACCEPT	No new mobile identity assigned. TMSI and P-TMSI not included. Attach result = 'Combined PS / IMSI attached' P-TMSI-3 signature Routing area identity = RAI-1
38	<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging for PS services
38a	->	RRC CONNECTION REQUEST	
38b	<-	RRC CONNECTION SETUP	
38c	->	RRC CONNECTION SETUP COMPLETE	
39	->	SERVICE REQUEST	service type = "paging response"
39a	<-	RRC CONNECTION RELEASE	
39b	->	RRC CONNECTION RELEASE COMPLETE	
40	UE		The UE is switched off or power is removed (see ICS).
41	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

Case 1) SS accept the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI.

At step5, UE shall

- send the ATTACH COMPLETE message.

At step10, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step14, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 2) SS accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI and TMSI.

At step20, UE shall:

- send the ATTACH COMPLETE message.

At step26, when the UE receives the paging message for CS domain with Mobile identity = TMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step30, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

Case 3) SS accepts the combined PS attach procedure (signalled by a P-TMSI) from the UE without reallocation of the previously used P-TMSI.

At step39, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.2 Combined PS attach / PS only attach accepted

12.2.2.2.1 Definition

12.2.2.2.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.2.3 Test purpose

Test purpose ~~propose~~1

To test the behaviour of the UE if the network accepts the PS attach procedure with indication PS only, GMM cause 'IMSI unknown in HLR'.

Test purpose ~~porpose~~2

To test the behaviour of the UE which does not support an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

Test purpose 3

To test the behaviour of the UE which supports an automatic MM IMSI attach if the network accepts the PS attach procedure with indication PS only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.2.2.2.4 Method of test

12.2.2.2.4.1 Test procedure ~~porpose~~1

Initial condition

System Simulator:

    One cell operating in network operation mode I.

User Equipment:

    The UE has a valid IMSI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE sends an ATTACH REQUEST message with identity IMSI. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI
4	<-		ATTACH ACCEPT	TMSI status = no valid TMSI available Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature GMM cause = 'IMSI unknown in HLR' Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

12.2.2.2.4.2   Test procedure ~~porpose~~2

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
~~Automatic MM IMSI attach procedure for UE operation mode A UE   Yes/No~~
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

~~Dependent whether the option 'Automatic MM IMSI attach procedure for UE operation mode A UE' is supported or not, the steps 1-22 or 23-53 apply depending on manufacturer (see ICS).~~

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ATTACH COMPLETE	
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-3 signature Routing area identity = RAI-1
11	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1
13		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
14	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-5 signature Routing area identity = RAI-1

Step	Direction		Message	Comments
	UE	SS		
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
18-20			(void)	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'. Stop the sequence.
23	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
24	UE			The UE is powered up or switched on and initiates an attach (see ICS).
25	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
26	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
28	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1
29	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
31	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-3 signature Routing area identity = RAI-1
32	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
33	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1
34	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.

Step	Direction		Message	Comments
	UE	SS		
35	←		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
37	→		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-5 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
38	SS			The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
39	←		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
40	UE			An automatic MM IMSI attach procedure is initiated.
41	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI
42-48			(void)	
49	←		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
50	→		RRC CONNECTION REQUEST	
51	←		RRC CONNECTION SETUP	
52	→		RRC CONNECTION SETUP COMPLETE	
53	→		PAGING RESPONSE	Mobile identity = TMSI-1
54	←		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
55	→		RRC CONNECTION RELEASE COMPLETE	
56	UE			The UE is switched off or power is removed (see ICS).
57	→		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

12.2.2.2.4.3 Test procedure 3

Initial condition

System Simulator:

One cell operating in network operation mode I. T3212 and T3302 is set to 6 minutes.

User Equipment:

The UE has a valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE sends an ATTACH REQUEST message. The SS allocates a P-TMSI and returns ATTACH ACCEPT message with a P-TMSI. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS returns a ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. The ROUTING AREA UPDATE procedure is repeated four times. An UE operation mode A UE may then perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
4		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1
6		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-3 signature Routing area identity = RAI-1
8		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-4 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1
10		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.
11		<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-5 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-5 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
13		SS		The SS verifies that the time between the previous routing area update accept and routing area update request is T3311.

Step	Direction UE | SS	Message	Comments
14	<-	ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. ~~P No new mobile identity assigned.~~ P-TMSI not included. Update result = 'RA updated' P-TMSI-6 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
15	UE		~~An automatic MM IMSI attach procedure is initiated.~~
16	UE	Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI Steps ~~49~~17 - ~~55~~23 are only performed if the UE has performed the Registration Procedure in step ~~41~~16.
17	<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->	RRC CONNECTION REQUEST	
19	<-	RRC CONNECTION SETUP	
20	->	RRC CONNECTION SETUP COMPLETE	
21	->	PAGING RESPONSE	Mobile identity = TMSI-1
22	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->	RRC CONNECTION RELEASE COMPLETE	
24	UE		The UE is switched off or power is removed (see ICS).
25	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.2.2.2.5 Test requirements

Test requirements for Test porpose1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test porpose2

~~Case 1) UE does not support Automatic MM IMSI attach procedure.~~

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, 10, 12 and 16, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

Case 2) UE supports Automatic MM IMSI attach procedure.

At step25, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step28, 31, 33 and 37, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

At step41, UE shall:

- perform MM location updating procedure.

At step53, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

Test requirements for Test porpose3

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with information elements specified in the above Expected Sequence.

At step5, 7, 9 and 11, when the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

At step16, UE shall:

- perform MM location updating procedure.

At step21, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.2.2.3 Combined PS attach / PS attach while IMSI attach

12.2.2.3.1 Definition

12.2.2.3.2 Conformance requirement

If the PS UE is already attached for non-PS services by the MM specific attach procedure, but wants to perform an attach for PS services, the combined PS attach procedure is performed.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.3.3 Test purpose

To test the behaviour of the UE if PS attach performed while IMSI attached.

12.2.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I. ATT flag is set.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

Support of PS service   Yes/No

UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE is forced to register for CS services but not to PS services. The SS verifies that the UE does not respond to paging messages for PS domain. Then the UE is triggered to perform the PS attach procedure and the SS verifies that it responds to PS paging messages.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS) and configured not to perform an automatic PS attach at switch on.
2	UE			The UE is powered up or switched on. No PS attach is performed (see ICS).
3			Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-1
4	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
5	UE			No response from the UE to the request. This is checked for 10 seconds.
6	UE			The UE is triggered to perform a PS attach.
7	->		ATTACH REQUEST	Attach type = 'PS attach while IMSI attached' or 'Combined PS / IMSI attached' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
8	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' No new mobile identity assigned. TMSI and P-TMSI not included P-TMSI-2 signature Routing area identity = RAI-1
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->		RRC CONNECTION REQUEST	
11	<-		RRC CONNECTION SETUP	
12	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
14	<-		RRC CONNECTION RELEASE	
15	->		RRC CONNECTION RELEASE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.3.5 Test requirements

UE is already attached for non-PS service with the MM specific attach procedure.

At step5, UE shall:

- not respond to the paging message for PS domain.

At step7, when the UE is requested to attach for PS services, UE shall:

- perform the combined PS attach procedure.

At step13, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.4 Combined PS attach / rejected / IMSI invalid / illegal ME

12.2.2.4.1 Definition

12.2.2.4.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'Illegal ME'.

12.2.2.4.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1(RAI-2).
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid TMSI-1, P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
USIM removal possible without powering down Yes/No

Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted
5	<-		ATTACH REJECT	GMM cause 'Illegal ME'.
6	UE		PAGING TYPE1	Mobile identity = TMSI-1Paging order is for CS services.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
9	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12	SS			The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE			Cell B is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	SS			The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
18	UE			Cell C is preferred by the UE.
19	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
20	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services
21	UE			No response from the UE to the request. This is checked for 10 seconds.
22	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24	UE			Step 25 is only performed for non-auto attach UE. A location updating procedure is initiated.
25	UE		Registration on CS	See TS34.108 Parameter Mobile identity is IMSI.
26	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
27		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
28		<-	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-2
29		->	ATTACH COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31		->	RRC CONNECTION REQUEST	
32		<-	RRC CONNECTION SETUP	
33		->	RRC CONNECTION SETUP COMPLETE	
34		->	PAGING RESPONSE	Mobile identity = TMSI-2
35		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36		->	RRC CONNECTION RELEASE COMPLETE	
37	UE			The UE is switched off or power is removed (see ICS).
38		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
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.

12.2.2.4.5   Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, 9 and 16, when the UE receives the paging message for CS domain, UE shall,

- not respond to the paging message for CS domain.

At step11 and 21, when the UE receives the paging message for PS domain, UE shall,

- not respond to the paging message for PS domain.

At step27, when the USIM is replaced, UE shall:

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain, UE shall,

- respond to the paging message for CS domain by sending the RAGING RESPONSE message.

12.2.2.5 Combined PS attach / rejected / PS services and non-PS services not allowed

12.2.2.5.1 Definition

12.2.2.5.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services and non-PS services not allowed', the User Equipment shall consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services and non-PS services not allowed', the User Equipment shall delete the stored TMSI, LAI, CSKN, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.5.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure of the UE with the cause 'PS services and non-PS services not allowed'.

12.2.2.5.4 Method of test

Initial condition

System Simulator:

- Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
  Both cells are operating in network operation mode I.

User Equipment:

- The UE has a valid TMSI-1, P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

- Support of PS service   Yes/No
  UE operation mode A   Yes/No
  Switch off on button   Yes/No
  Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PS services and non-PS services not allowed'. The SS checks that the UE does not perform PS attach in the same or another PLMN. CS services are not possible as the USIM is blocked for CS services. PS services are not possible as the USIM is blocked for PS services.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
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 A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'PS services and non-PS services not allowed'
6	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS Paging.
10	UE			No response from the UE to the request. This is checked for 10 seconds
11		SS		Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
12			(void)	
13	UE			The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds).
14	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
15	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
16	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
17	UE			No response from the UE to the request. This is checked for 10seconds.
18	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.
19	UE			The UE is powered up or switched.
20	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is IMSI.
21	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
22	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
23	<-		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-2

Step	Direction		Message	Comments
	UE	SS		
24	->		ATTACH COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
26	->		RRC CONNECTION REQUEST	
27	<-		RRC CONNECTION SETUP	
28	->		RRC CONNECTION SETUP COMPLETE	
29	->		PAGING RESPONSE	Mobile identity = TMSI-1
30	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->		RRC CONNECTION RELEASE COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		SERVICE REQUEST	Service type = "paging response"
37	<-		RRC CONNECTION RELEASE	
38	->		RRC CONNECTION RELEASE COMPLETE	
39	UE			The UE is switched off or power is removed (see ICS).
40	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Off cellNon-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.2.2.5.5   Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8 and 14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step10 and 17, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step22, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure.

At step29, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step36, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.6 Combined PS attach / rejected / PS services not allowed

12.2.2.6.1 Definition

12.2.2.6.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

3) A PS class AUE shall perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2

12.2.2.6.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS services not allowed'.

12.2.2.6.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
Both cells are operating in network operation mode I.
ATT flag set to 1

User Equipment:

The UE has a valid TMSI, P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a normal attach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach. PS services are not possible. An UE operation mode A UE shall perform an MM IMSI attach.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
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 powered up or switched on.
2a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
2b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH REJECT	GMM cause 'PS services not allowed'
5	UE			An automatic MM IMSI attach procedure is initiated.
6	UE		Registration on CS	See TS 34.108 Location updating type = IMSI attach. The SS allocates TMSI-2.
7	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
8	->		RRC CONNECTION REQUEST	
9	<-		RRC CONNECTION SETUP	
10	->		RRC CONNECTION SETUP COMPLETE	
11	->		PAGING RESPONSE	Mobile identity = TMSI-2
12	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signaling link.
13	->		RRC CONNECTION RELEASE COMPLETE	
14		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)
15	UE			Cell B is preferred by the UE.
16	UE			A location updating procedure is initiated.
17	UE		Registration on CS	See TS 34.108 Location updating type = normal. The SS allocates TMSI-1.
18	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
19	->		RRC CONNECTION REQUEST	
20	<-		RRC CONNECTION SETUP	
21	->		RRC CONNECTION SETUP COMPLETE	
22	->		PAGING RESPONSE	Mobile identity = TMSI-1
23	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
24	->		RRC CONNECTION RELEASE COMPLETE	
25	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging is for PS services
26	UE			No response from the UE to the request. This is checked for 10seconds.
27	UE			If possible (see ICS) switch off is performed. Otherwise the power is removed.

Step	Direction		Message	Comments
	UE	SS		
27a	UE			If switch off is performed then UE performs IMSI detach procedure.
28	UE			The UE is powered up or switched.
28a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
28b	UE			UE initiates an attach automatically (see ICS), via MMI or AT commands.
29	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI
30	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-2 Routing area identity = RAI-2
31	->		ATTACH COMPLETE	
32	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
33	->		RRC CONNECTION REQUEST	
34	<-		RRC CONNECTION SETUP	
35	->		RRC CONNECTION SETUP COMPLETE	
36	->		PAGING RESPONSE	Mobile identity = TMSI-2
37	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
38	->		RRC CONNECTION RELEASE COMPLETE	
39	UE			The UE is switched off or power is removed (see ICS).
40	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
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.

12.2.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, if the UE is PS class A, UE shall:

- perform the MM IMSI attach procedure.

At step11, 22 and 36, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step29, UE shall:

- perform the PS attach procedure.

12.2.2.7a Combined PS attach / rejected / location area not allowed

12.2.2.7a.1 Definition

12.2.2.7a.2 Conformance requirement

1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

    1.1 not perform combined PS attach when in the same location area.

    1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

    1.3 store the LA in the 'forbidden location areas for regional provision of service'.

    1.4 not delete the list of "equivalent PLMNs".

    1.5 perform a cell selection.

2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

    2.1 perform combined PS attach when a new location area is entered.

    2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.2.2.7a.4 Method of test

Initial condition

System Simulator:

    Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2~~1~~/MNC1/LAC2/RAC1 (RAI-6~~3~~).
    All cells are operating in network operation mode I.

    The PLMN contains Cell B and C is equivalent to the PLMN that contains Cell A.

User Equipment:

    The UE has a valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH REJECT	GMM cause 'Location Area not allowed'
6	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7	<-		PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->			No response from the UE to the request. This is checked for 10 seconds
11		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
11a	UE			The UE performs cell selection.
12	UE			Cell B is preferred by the UE.
13	UE			No ATTACH REQUEST or LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
16	UE			No response from the UE to the request. This is checked for 10seconds.
17	UE			The UE initiates an attach by MMI or AT command.
18				No attach is performed by the UE. This is checked for 10 seconds.
19		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19a	UE			The UE performs cell selection
20	UE			Cell C is preferred by the UE. Step 20a is only performed for non-auto attach UE and is optional.
20a	UE		Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
20b	UE			UE initiates an attach automatically (see ICS) via MMI or AT commands.

Step	Direction		Message	Comments
	UE	SS		
21	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
22	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6~~3~~
23	->		ATTACH COMPLETE	
24	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->		RRC CONNECTION REQUEST	
26	<-		RRC CONNECTION SETUP	
27	->		RRC CONNECTION SETUP COMPLETE	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->		RRC CONNECTION RELEASE COMPLETE	
31	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32	->		RRC CONNECTION REQUEST	
33	<-		RRC CONNECTION SETUP	
34	->		RRC CONNECTION SETUP COMPLETE	
35	->		SERVICE REQUEST	Service type = "paging response"
36	<-		RRC CONNECTION RELEASE	
37	->		RRC CONNECTION RELEASE COMPLETE	
38	UE			The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
40	UE			The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note) Cell B is preferred by the UE.
41	UE			The UE is powered up or switched on and initiates an attach (see ICS).
42				Step 43 is only performed for non-auto attach UE.
43	UE		Registration on CS	See TS 34.108
44	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
45	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6~~3~~
46	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-4
47	->		ATTACH COMPLETE	
48	<-		PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
49	->		RRC CONNECTION REQUEST	
50	<-		RRC CONNECTION SETUP	
51	->		RRC CONNECTION SETUP COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
52	->		PAGING RESPONSE	Mobile identity = TMSI-2
53	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
54	->		RRC CONNECTION RELEASE COMPLETE	
55	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
56	->		RRC CONNECTION REQUEST	
57	<-		RRC CONNECTION SETUP	
58	->		RRC CONNECTION SETUP COMPLETE	
59	->		SERVICE REQUEST	service type = "paging response"
60	<-		RRC CONNECTION RELEASE	
61	->		RRC CONNECTION RELEASE COMPLETE	
62	UE			The UE is switched off or power is removed (see ICS).
63	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Off cellNon-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.2.2.7a.5   Test requirements

At step4, when the UE is powered up or switched on, UE shall:

-   initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence

At step6, when the UE receives the ATTACH REJECT message with GMM cause = 'Location Area not allowed', UE shall:

-   not initiate MM location updating procedure.

At step8, when the UE receives the paging message for CS domain, UE shall:

-   not respond to the paging message for CS domain.

At step10 and 16, when the UE receives the paging message for PS domain, UE shall:

-   not respond to the paging message for PS domain.

At step13 and 18, when the UE is in the same location area, UE shall:

-   not perform PS attach procedure.

At step21, when the UE enters a new location area, UE shall

-   perform the combined PS attach procedure.

At step28 and 52, when the UE receives the paging message for CS domain, UE shall:

-   respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35 and 59, when the UE receives the paging message for PS domain, UE shall:

-   respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step45, when the UE is powered up or switched on, UE shall:

-   perform the combined PS attach procedure.

12.2.2.7b Combined PS attach / rejected / No Suitable Cells In Location Area

12.2.2.7b.1 Definition

12.2.2.7b.2 Conformance requirement

3)1) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

 1.1 not perform combined PS attach when in the same location area.

 1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

 1.3 store the LA in the 'forbidden location areas for roaming'.

 1.4 not delete the list of "equivalent PLMNs".

4)2) If the network rejects a combined PS attach procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

 2.1 search for a suitable cell in a different location area on the same PLMN.

Reference

3GPP TS 24.008 clauses 4.7.3.2.

12.2.2.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the combined PS attach procedure with the cause 'No Suitable Cells In Location Area'.

12.2.2.7b.4 Method of test

Initial condition

System Simulator:

 Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC21/MNC1/LAC2/RAC1 (RAI-63), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

User Equipment:

 The UE has valid TMSI, P-TMSI, P-TMSI signature and RAI

 The PLMN contains Cell B and C is equivalent to the PLMN that contains Cell A.

Related ICS/IXIT statements

 Support of PS service   Yes/No
 UE operation mode A   Yes/No
 Switch off on button   Yes/No
 Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined PS attach with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall search for a suitable cell in a different location area on the same PLMN and shall perform combined PS attach procedure in that cell

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH REJECT	GMM cause = 'No Suitable Cells In Location Area'
5		SS		The SS initiates the RRC connection release. The following message are sent and shall be received on cell B.
6	UE			The UE initiates an attach automatically, by MMI or by AT command.
7	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
8	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-•6
9	->		ATTACH COMPLETE	
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.2.2.7b.5 Test requirements

At 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 enters a suitable cell in a different location area on the same PLMN, UE shall:

- initiate the combined PS attach procedure.

12.2.2.7c Combined PS attach / rejected / Roaming not allowed in this location area

12.2.2.7c.1 Definition

12.2.2.7c.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'Roaming area not allowed in this location area' the User Equipment shall:

1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

1.3 delete any TMSI, LAI and ciphering key sequence number.

1.4 store the LAI in the list of "forbidden location areas for roaming".

1.5 perform a PLMN selection.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7c.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'Roaming not allowed in this location area'.

12.2.2.7c.4 Method of test

Initial condition

System Simulator:

Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) , cell C in MCC1/MNC1/LAC2/RAC2 (RAI-12)
All two cells are operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No (only if mode C not supported)
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'Roaming area not allowed in this location area'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction UE SS	Message	Comments
1	SS SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE		The UE is set in UE operation mode A (see ICS).
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-	ATTACH REJECT	GMM cause = 'Roaming area not allowed in this location area'
6	UE		No LOCATION UPDATING REQ and ATTACH REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7	<-	PAGING TYPE1	Mobile identity = TMSI Paging order is for CS services.
8	UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10	->		No response from the UE to the request. This is checked for 10 seconds.
11	UE		UE performs PLMN selection.
12	SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
13	UE		Cell B is preferred by the UE.
14	UE		No LOCATION UPDATING REQ is sent to SS (SS waits 60 seconds)
15	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
16	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
17	->	ATTACH COMPLETE	
18	SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
19	UE		Cell C is preferred by the UE.
20	UE	Registration on CS	Parameter Mobile identity is IMSI. See TS 34.108
21	UE		UE initiates an attach automatically (see ICS) via MMI or AT commands.
22	<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
23	->	RRC CONNECTION REQUEST	
24	<-	RRC CONNECTION SETUP	

Step	Direction		Message	Comments
	UE	**SS**		
25	->		RRC CONNECTION SETUP COMPLETE	
26	->		PAGING RESPONSE	Mobile identity = TMSI-1
27	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28	->		RRC CONNECTION RELEASE COMPLETE	
29	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
30	->		RRC CONNECTION REQUEST	
31	<-		RRC CONNECTION SETUP	
32	->		RRC CONNECTION SETUP COMPLETE	
33	->		SERVICE REQUEST	Service type = "paging response"
34	<-		RRC CONNECTION RELEASE	
35	->		RRC CONNECTION RELEASE COMPLETE	
36	UE			The UE is switched off or power is removed (see ICS).
37	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".				

Specific message contents

None.

12.2.2.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- not perform MM IMSI attach and PS attach.

At step8, UE shall:

- not respond to paging for CS domain service.

At step10, UE shall:

- not respond to paging for PS domain service.

At step15, UE shall:

- perform PS attach procedure.

At step20, UE shall:

- perform MM IMSI attach procedure.

12.2.2.7d Combined PS attach / rejected / PS services not allowed in this PLMN

12.2.2.7d.1 Definition

12.2.2.7d.2 Conformance requirement

1) If the network rejects a PS attach procedure from the User Equipment with the cause 'PS service not allowed in this PLMN' the User Equipment shall:

   1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

   1.2 set the PS update status to GU3 ROAMING NOT ALLOWED.

   1.3 store the PLMN identity in the "forbidden PLMNs for PS service" list.

2) If the UE is in UE operation mode A the User Equipment shall:

   2.1 perform IMSI attach for non-GPRS services by use of the MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.1.

12.2.2.7d.3 Test purpose

To test the behaviour of the UE if the network rejects the PS attach procedure of the UE with the cause 'PS service not allowed in this PLMN'.

12.2.2.7d.4 Method of test

Initial condition

System Simulator:

   Two cells cell A with MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2). All two cells are operating in network operation mode I.

   The PLMN contains Cell B is equivalent to the PLMN that contains Cell A.

User Equipment:

   The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

Related ICS/IXIT statements

   Support of PS service   Yes/No
   UE operation mode C   Yes/No
   UE operation mode A   Yes/No (only if mode C not supported)
   Switch off on button Yes/No
   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a PS attach with the cause value 'PS service not allowed in this PLMN'. The SS checks that the UE does not perform PS attach and performs an IMSI attach for non-PS services by use of the MM IMSI attach procedure when in the same cell.

After the cell is changed to equivalent PLMN, the UE shall perform PS attach procedure.

Expected Sequence

Step	Direction UE SS	Message	Comments
	SS		The following messages are sent and shall be received on cell A.
1	UE		The UE is set in UE operation mode A (see ICS).
2	SS		The SS is set in network operation mode I. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the " Non-suitable cell ". (see note)
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-	ATTACH REJECT	GMM cause = 'PS service not allowed in this PLMN'
6	UE	Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
7	UE		No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
8	SS		Set the cell type of cell A to the " Non-suitable cell ". Set the cell type of cell B to the " Serving cell". (see note) The following messages are sent and shall be received on cell B.
9	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
10	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
11	->	ATTACH COMPLETE	
12	UE		The UE is switched off or power is removed (see ICS).
13	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.2.2.7d.5   Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, UE shall:

- perform MM IMSI attach.

At step7, UE shall:

-   not perform PS attach procedure.

At step9, UE shall:

-   perform PS attach procedure.

12.2.2.8 Combined PS attach / abnormal cases / attempt counter check / miscellaneous reject causes

12.2.2.8.1 Definition

12.2.2.8.2 Conformance requirement

1) When a combined PS attach procedure is rejected with the attempt counter less than five, the User Equipment shall repeat the combined PS attach procedure after T3311 timeout.

2) When a combined PS attach procedure is rejected with the attempt counter five, the User Equipment shall delete the stored TMSI, LAI, CKSN, P-TMSI, P-TMSI signature, PS CKSN and RAI and start T3302.

3) When the T3302 expire, a new combined PS attach procedure shall be initiated.

GMM cause codes that can be selected are:
'IMSI unknown in HLR'
'UE identity cannot be derived by the network'
'Network failure'
'Congestion'
'retry upon entry into a new cell'
'Semantically incorrect message'
'Invalid mandatory information'
'Message type non-existent or not implemented'
'Message type not compatible with the protocol state'
'Information element non-existent or not implemented'
'Conditional IE error'
'Message not compatible with the protocol state'
'Protocol error, unspecified'

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.8.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.2.2.8.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A Yes/No Automatic PS attach procedure at switch on or power on Yes/No

Switch off on button Yes/No

Test procedure

The UE initiates a combined PS attach procedure (attempt counter zero).

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter one) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter two) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter three) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE initiates a new combined PS attach procedure (attempt counter four) after T3311 expires.

The SS rejects the attach with an arbitrarily chosen cause code.

The UE shall not perform a new successful attach procedure after 15 seconds.

The UE initiates a combined PS attach procedure with attempt counter zero after T3302 expires without P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 10 minutes.

T3311; 15 seconds.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH REJECT	Arbitrary chosen GMM cause T3302 with value 10 min.
5	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
6		SS		The SS verifies that the time between the attach reject and attach request is T3311
7	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
8	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
9		SS		The SS verifies that the time between the attach reject and attach request is T3311
10	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
11	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
12		SS		The SS verifies that the time between the attach reject and attach request is T3311
13	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
14	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
15		SS		The SS verifies that the time between the attach reject and attach request is T3311
16	<-		ATTACH REJECT	Arbitrarily chosen GMM cause T3302 with value 10 min.
17 (option al step)	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Location Update Procedure may be initiated from the UE. Parameter mobile identity is IMSI.
20	<-		PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-1
21	UE			No response from the UE to the request. This is checked for 10seconds.
21a	->		ATTACH REQUEST	Attach type = 'Combined PS/IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status =no valid TMSI available
22		SS		The SS verifies that the UE does not attempt to attach for T3302 .
23	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	**SS**		
24		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity P-TMSI-1 P-TMSI signature Mobile identity = TMSI-1 Routing area identity = RAI-1
25		->	ATTACH COMPLETE	
26		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services..
27		->	RRC CONNECTION REQUEST	
28		<-	RRC CONNECTION SETUP	
29		->	RRC CONNECTION SETUP COMPLETE	
30		->	PAGING RESPONSE	Mobile identity = TMSI-1
31		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32		->	RRC CONNECTION RELEASE COMPLETE	
33		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
33a		->	RRC CONNECTION REQUEST	
33b		<-	RRC CONNECTION SETUP	
33c		->	RRC CONNECTION SETUP COMPLETE	
34		->	SERVICE REQUEST	Service type = "paging response"
34a		<-	RRC CONNECTION RELEASE	
34b		->	RRC CONNECTION RELEASE COMPLETE	
35	UE			The UE is switched off or power is removed (see ICS).
36		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the conditions described below.

Case1) A combined PS attach procedure is rejected with the attempt counter less than five

At step6, 9, 12 and 15, when the timer T3311 timeout has occurred, UE shall:

- repeat the combine PS attach procedure.

Case2) A combined PS attach procedure is rejected with the attempt counter five

At step21, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

Case3) The T3302 expires

At step23, UE shall:

- re-initiate the new combined PS attach procedure.

At step30, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step34, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.2.2.9 Combined PS attach / abnormal cases / PS detach procedure collision

12.2.2.9.1 Definition

12.2.2.9.2 Conformance requirement

1) When a DETACH REQUEST message is received by the UE (any cause except re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

2) When a DETACH REQUEST message is received by the UE (cause re-attach) while waiting for an ATTACH ACCEPT message or ATTACH REJECT message, the UE shall ignore the combined PS detach procedure and continue with the combined PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.3.2.

12.2.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.2.2.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has valid TMSI, P-TMSI, P-TMSI signature and RAI. UE is Idle Updated.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No
Re-attach automatically when the network commands a detach with no cause value Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (any cause except re-attach). The UE shall terminate the combined PS attach procedure and continue with the combined PS detach procedure.

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (cause re-attach). The UE shall ignore the combined PS detach procedure and continue with the combined PS attach. CS services are also possible.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4		SS		The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
5		<-	DETACH REQUEST	Detach type = 're-attach not required'
6	->		DETACH ACCEPT	
7			(void)	
8			(void)	
9	UE			The UE is attached by MMI or AT command if the UE does not re-attach automatically upon receiving a network initiated detach with no cause value, (see IXIT).
10	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
11		SS		The SS ignores the ATTACH REQUEST message and initiates a detach procedure.
12		<-	DETACH REQUEST	Detach type = 're-attach required'
13	UE			The UE ignores the DETACH REQUEST message and continue with the attach procedure
14		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-1
15	->		ATTACH COMPLETE	
16		<-	PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
17	->		RRC CONNECTION REQUEST	
18		<-	RRC CONNECTION SETUP	
19	->		RRC CONNECTION SETUP COMPLETE	
20	->		PAGING RESPONSE	Mobile identity = TMSI-2
21		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
22	->		RRC CONNECTION RELEASE COMPLETE	
23		<-	PAGING TYPE1	Paging order is for PS services. Mobile identity = P-TMSI-2
23a	->		RRC CONNECTION REQUEST	
23b		<-	RRC CONNECTION SETUP	
23c	->		RRC CONNECTION SETUP COMPLETE	
24	->		SERVICE REQUEST	Service type = "paging response"
24a		<-	RRC CONNECTION RELEASE	
24b	->		RRC CONNECTION RELEASE COMPLETE	
25	UE			The UE is switched off or power is removed (see ICS).
26	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

UE shall perform the following actions depending on the Detach type described below.

Case1) Detach type is not re-attach

At step6, UE shall:

- respond to DETACH REQUEST message by sending DETACH ACCEPT message.

Case2) Detach type is re-attach

At step13, UE shall:

- ignore the PS detach procedure.

At step15, UE shall:

- send the ATTACH COMPLETE message.

At step20, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3 PS detach procedure

12.3.1 UE initiated PS detach procedure

12.3.1.1 PS detach / power off / accepted

12.3.1.1.1 Definition

12.3.1.1.2 Conformance requirement

The UE detaches the IMSI for PS services if the UE is switched off.

Reference

3GPP TS 24.008 clause 4.7.4.1

12.3.1.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

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 (see ICS). If UE operation mode C not supported, goto step 8.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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	
6	UE			The UE is switched off (see ICS).
7	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
8	UE			The UE is set in UE operation mode A(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 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 (see ICS). If UE operation mode C not supported, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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
5			(void)	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
8	<-		DETACH ACCEPT	
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 (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 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.

12.3.1.3 PS detach / abnormal cases / attempt counter check / procedure timeout

12.3.1.3.1 Definition

12.3.1.3.2 Conformance requirement

1) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter less than five, the User Equipment shall repeat the PS detach procedure.

2) When a T3321 timeout has occurred during a PS detach procedure with the attempt counter five, the User Equipment shall not repeat the procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.3.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.3.1.3.4 Method of test

Initial condition

System Simulator:

> One cell operating in network operation mode II.

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 initiates a PS detach procedure (attempt counter zero). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter one) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter two) after T3321expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter three) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter four) after T3321 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure with attempt counter five (after T3321expires). The SS does not answer with DETACH ACCEPT message before T3321 timeout.

At T3321 timeout in the UE, the UE then deletes the logical link since the retransmissions have been repeated four times.

The UE performs a new PS attach procedure.

T3321; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 25.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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
5	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
6	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
7		SS		No response is given from the SS.
8		SS		The SS verifies that the time between the detach requests is 15 seconds
9	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
10		SS		No response is given from the SS.
11		SS		The SS verifies that the time between the detach requests is 15 seconds
12	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
13		SS		No response is given from the SS.
14		SS		The SS verifies that the time between the detach requests is 15 seconds
15	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
16		SS		No response is given from the SS.
17		SS		The SS verifies that the time between the detach requests is 15 seconds
18	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
19		SS		No response is given from the SS within 40 seconds and SS verifies that the UE will not send a DETACH REQUEST again.
20	UE			Initialte a PS attach
21	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
22	<-		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
23				UE is switched off or power is removed (see ICS)
24	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
25	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 24.

Specific message contents

None.

12.3.1.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attaché procedure with the information elements specified in the above Expected Sequence.

At step9, 12, 15 and 18, when a T3321 expires with the attempt counter less than five, UE shall:

- initiate the new PS detach procedure.

At step19, when the attempt counter is greater than or equal to five, UE shall:

- not repeat the PS detach procedure.

At step20, UE shall:

- initiate the PS attaché procedure.

12.3.1.4 PS detach / abnormal cases / GMM common procedure collision

12.3.1.4.1 Definition

12.3.1.4.2 Conformance requirement

When any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off", the UE shall ignore the GMM common message.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.4.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.4.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
UE operation mode A   Yes/No (only if mode C not supported)
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The following test procedure is repeated for sequence counter k = 1,2,3:

The UE performs a PS attach.

The UE initiates a PS detach. The SS initiates a P-TMSI REALLOCATION COMMAND message (k=1), a GMM STATUS message (k=2) and a GMM INFORMATION message (k=3). The UE shall ignore the GMM common messages and continue with the PS detach procedure. The sending of the P-TMSI REALLOCATION COMMAND message (k = 1), the GMM STATUS message (k = 2), the GMM INFORMATION message (k = 3) and the DETACH ACCEPT message shall be completed within Timer T3321 -10%.

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

Expected Sequence

The test sequence is repeated for k = 1 … 3

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	UE			The UE initiates a detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
8A (k=1)	SS			The SS sends a P-TMSI REALLOCATION COMMAND message
9A (k=1~~2~~)	<-		P-TMSI REALLOCATION COMMAND	
10A (k=3~~1~~)	UE			The UE ignores the message. This is verified for ~~12~~ 10 seconds.
8B (k=2)	SS			The SS sends a GMM STATUS message
9B (k=2)	<-		GMM STATUS	
10C (k=2)	UE			The UE ignores the message. This is verified for ~~12~~ 10 seconds.
8C (k=3)	SS			The SS sends a GMM INFORMATION message
9C (k=3)	<-		GMM INFORMATION	
10C (k=3)	UE			The UE ignores the message which is verified for ~~12~~ 10 seconds or if GMM INFORMATION message not implemented, sends a GMM STATUS with GMM Cause 'Message type non-existent or not implemented'.
11	<-		DETACH ACCEPT	The SS responds to the DETACH REQUEST
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds.

Note: Steps 8x, 9x, 10x and 11 shall be completed within Timer T3321 -10%

Specific message contents

None.

12.3.1.4.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step 10A, 10B, 10C and 13, when any of the GMM common messages P-TMSI REALLOCATION COMMAND, GMM STATUS or GMM INFORMATION is received by the UE while waiting for a DETACH ACCEPT message with detach cause different from "power off, UE shall:

- ignore any of the GMM common message.

12.3.1.5 PS detach / power off / accepted

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 (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6	UE			The UE is switched off (see ICS).
7	->		DETACH REQUEST	Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.1.5.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the 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(see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6	UE			The UE initiates a detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
8	<-		DETACH ACCEPT	
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 step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.1.7   PS detach / accepted / IMSI detach

12.3.1.7.1   Definition

12.3.1.7.2   Conformance requirement

The UE shall detach for CS services.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.7.3   Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.1.7.4   Method of test

Initial condition

System Simulator:

      One cell operating in network operation mode I.

User Equipment:

- The UE has a valid IMSI.

Related ICS/IXIT statements

- Support of PS service   Yes/No
  UE operation mode A   Yes/No
  Switch off on button   Yes/No
  Automatic PS attach procedure at switch on or power on   Yes/No
  User requested non-PS detached   Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE performs an PS detach (for non-PS services).

CS services are not possible.

The UE attach for non-PS services by a routing area update procedure and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6	UE			The UE initiates a detach for non-PS services (without power off) (see ICS).
7	->		DETACH REQUEST	Detach type = 'normal detach, IMSI detach'
8		<-	DETACH ACCEPT	
9		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
9a	->		RRC CONNECTION REQUEST	
9b		<-	RRC CONNECTION SETUP	
9c	->		RRC CONNECTION SETUP COMPLETE	
10	->		SERVICE REQUEST	service type = "paging response"
10a		<-	RRC CONNECTION RELEASE	
10b	->		RRC CONNECTION RELEASE COMPLETE	
11		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services. Paging order is for RRC connection.
12	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
13	UE			The UE initiates an attach for non-PS services by a RA update procedure (see ICS).
14	->		ROUTING AREA UPDATE REQUEST	Update type = "Combined RA/LA updating with IMSI attach" P-TMSI-1 signature Routing area identity = RAI-1
15		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated" Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
16	->		ROUTING AREA UPDATE COMPLETE	
17		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
18	->		RRC CONNECTION REQUEST	
19		<-	RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
21	->		PAGING RESPONSE	Mobile identity = TMSI-1
22		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
24	UE			The UE is switched off or power is removed (see ICS).
25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.1.7.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step10, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step12, after the detach procedure (Detach type = 'normal detach, IMSI detach') is completed, UE shall:

- not respond to the paging message for CS.

At step21, after the routing area updating procedure (Update type = 'Combined RA/LA updating') is completed, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.1.8 PS detach / abnormal cases / change of cell into new routing area

12.3.1.8.1 Definition

12.3.1.8.2 Conformance requirement

When a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, the UE shall abort the PS detach procedure and re-initiate it after the routing area update procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.8.4 Method of test

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> Both cells are operating in network operation mode I.

User Equipment:

> The UE has a valid IMSI.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No
> User requested combined PS and non-PS detached without powering off   Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE initiates a PS detach procedure. The DETACH ACCEPT message is delayed from the SS.

The UE performs a cell update into a new routing area.

The UE shall re-initiate a PS detach procedure when the routing area update procedure is finished.

The UE deletes the logical link.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
5	<-		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
6	->		ATTACH COMPLETE	
7	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
8	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
9		SS		No response to the DETACH REQUEST message is given by the SS
10		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 ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note) Cell B is preferred by the UE.
11	UE			The UE performs a RA update in the new cell.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE omitted
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	->		DETACH REQUEST	The detach is automatically re-attempted. Detach type = 'normal detach, combined PS / IMSI detach'
16	<-		DETACH ACCEPT	
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.3.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when a change of cell into a new routing area is performed before DETACH ACCEPT message is received by the UE, UE shall:

- abort a PS detach procedure.

- perform routing area updating procedure.

At step15, when the UE completes a routing area updating procedure, UE shall:

- re-initiate the PS detach procedure.

12.3.1.9 PS detach / abnormal cases / PS detach procedure collision

12.3.1.9.1 Definition

12.3.1.9.2 Conformance requirement

When a DETACH REQUEST is received by the UE while waiting for a DETACH ACCEPT message, the UE shall answer the network initiated PS detach procedure.

Reference

3GPP TS 24.008 clause 4.7.4.1.

12.3.1.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.3.1.9.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No
User requested combined PS and non-PS detached without powering off   Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The UE initiates a PS detach. The SS does not answer the detach procedure, but initiates a detach procedure (cause re-attach not required). The UE shall continue with the network initiated detach procedure.

The UE deletes the logical link.

PS and CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A(see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
7	->		DETACH REQUEST	Detach type = 'normal detach, combined PS / IMSI detach'
8		<-	DETACH REQUEST	Detach type = 're-attach not required'
9	->		DETACH ACCEPT	The UE answers the network initiated detach.
10		<-	DETACH ACCEPT	The SS answers the UE initiated detach.
11		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13		<-	PAGING TYPE 1	Mobile identity = TMSI-1 Paging order is for CS services.
14	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.

Specific message contents

None.

12.3.1.9.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives DETACH REQUEST message from SS before UE initiated PS detach procedure has been completed, UE shall:

- send the DETACH ACCEPT message to SS.

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step14, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.3.2 Network initiated PS detach procedure

12.3.2.1 PS detach / re-attach not required / accepted

12.3.2.1.1 Definition

12.3.2.1.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.1.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.1.4 Method of test

Initial condition

System Simulator:

> One cell operating in network operation mode II (in case of UE operation mode A).

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		The SS is set in network operation mode II.
2	UE			The UE is set in UE operation mode A or C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The SS initiates a PS detach.
8	<-		DETACH REQUEST	Detach type = 're-attach not required'
9	->		DETACH ACCEPT	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. PAGING TYPE1 (used for NW-mode II).
11	UE			No response from the UE to the request. This is checked for 10 seconds.

Specific message contents

None.

12.3.2.1.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall:

- send DETACH ACCEPT message to SS.

At step11, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.3.2.2 PS detach / rejected / IMSI invalid / PS services not allowed

12.3.2.2.1 Definition

12.3.2.2.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'PS services not allowed', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network performs a PS detach procedure with the cause 'PS services not allowed' the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.2.3   Test purpose

To test the behaviour of the UE if the network orders a PS detach procedure with the cause 'PS services not allowed' (no valid PS-subscription for the IMSI).

12.3.2.2.4   Method of test

Initial condition

System Simulator:

>Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (HPLMN, RAI-1) and cell B in MCC2/MNC1/LAC1/RAC1 (RAI-2).
>Both cells are operating in network operation mode II.

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
>USIM removal possible without powering down Yes/No
>Switch off on button   Yes/No
>Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS performs a detach with the cause value 'PS services not allowed'. The SS checks that the UE does not perform PS attach in another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
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 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause = 'PS services not allowed'
8	->		DETACH ACCEPT	
9		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)
10	UE			Cell B is preferred by the UE. Step 11 is only performed for UE Operation Mode A.
11	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is IMSI.
12				The UE initiates an attach automatically (see ICS), by MMI or AT commands.
13	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
14	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
15	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
16	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
17	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
18	->		ATTACH COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

21			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)
22	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.
NOTE:		The definitions for "~~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.

12.3.2.2.5 Test requirements

At step4 and 15, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'PS services not allowed') from SS, UE shall:

- send DETACH ACCEPT message.

At step13, UE shall:

- not perform PS attach procedure.

12.3.2.3 PS detach / IMSI detach / accepted

12.3.2.3.1 Definition

12.3.2.3.2 Conformance requirement

The UE detach the IMSI for PS services.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.3.3 Test purpose

To test the behaviour of the UE for the detach procedure.

12.3.2.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No

Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE. The UE then performs an IMSI detach (detach for non-PS services).

The SS signal to the UE, but no response is received, as the signalling link is disconnected.

The UE attach for non-PS services by a routing area update procedure. Both PS and CS services are possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The SS initiates a detach for non-PS services.
7	<-		DETACH REQUEST	Detach type = 'IMSI detach'
8	->		DETACH ACCEPT	
9	UE			The UE initiates an attach for non-PS services (see ICS).
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updating' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
12	->		ROUTING AREA UPDATE COMPLETE	
13	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
14	->		RRC CONNECTION REQUEST	
15	<-		RRC CONNECTION SETUP	
16	->		RRC CONNECTION SETUP COMPLETE	
17	->		PAGING RESPONSE	Mobile identity = TMSI-1
18	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
19	->		RRC CONNECTION RELEASE COMPLETE	
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.2.3.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives the DETACH REQUEST message with Detach type = 'IMSI detach', UE shall;

- send the DETACH ACCEPT message to SS.

At step10, after the completion of the detach procedure, UE shall;

- perform combined routing area updating procedure.

At step17, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.4 PS detach / re-attach requested / accepted

12.3.2.4.1 Definition

12.3.2.4.2 Conformance requirement

The UE shall deactivate the logical link and re-activate it.

Reference

3GPP TS 24.008 clause 4.7.4.2.

12.3.2.4.3 Test purpose

To test the behaviour of the UE for the detach procedure in case automatic re-attach.

12.3.2.4.4 Method of test

Initial condition

System Simulator:

 One cell in operating in network operation mode I.

User Equipment:

 The UE has a valid TMSI, P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

 Support of PS service Yes/No
 UE operation mode A Yes/No
 Switch off on button Yes/No
 Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE performs a combined PS attach procedure (for PS and non-PS services).

The SS sends a DETACH REQUEST message to the UE with cause re-attach. The UE then detaches for PS services. The UE automatically performs a new combined PS attach procedure (for PS and non-PS services) and PS and CS services are possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = TMSI-1 Routing area identity = RAI-1 No new P-TMSI and P-TMSI signature assigned
5	->		ATTACH COMPLETE	
6	SS			The SS initiates a detach with re-attach.
7	<-		DETACH REQUEST	Detach type = 're-attach required'
8	->		DETACH ACCEPT	
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 Routing area identity = RAI-1
10	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = TMSI-1 Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
11	->		ATTACH COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
12a	->		RRC CONNECTION REQUEST	
12b	<-		RRC CONNECTION SETUP	
12c	->		RRC CONNECTION SETUP COMPLETE	
13	->		SERVICE REQUEST	service type = "paging response"
13a	<-		RRC CONNECTION RELEASE	
13b	->		RRC CONNECTION RELEASE COMPLETE	
14	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
15	->		RRC CONNECTION REQUEST	
16	<-		RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
18	->		PAGING RESPONSE	Mobile identity = TMSI-1
19	<-		RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receives DETACH REQUEST message with Detach type = 're-attach required', UE shall;

- send DETACH ACCEPT message to SS.

At step9, after UE completed PS detach procedure with Detach type = 're-attach required', UE shall:

- initiate the combined PS attach procedure.

At step13, when the UE receives the paging message for PS domain, UE shall;

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step18, when the UE receives the paging message for CS domain, UE shall:

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.3.2.5 PS detach / rejected / location area not allowed

12.3.2.5.1 Definition

12.3.2.5.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

    1.1 not perform combined PS attach when in the same location area.

    1.2 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

    1.3 store the LA in the 'forbidden location areas for regional provision of service'.

2) If the network performs a PS detach procedure with the cause 'location area not allowed' the User Equipment shall:

    2.1 perform combined PS attach when a new location area is entered.

    2.2 delete the list of forbidden LAs when power is switched off.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.5.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.3.2.5.4 Method of test

Initial condition

System Simulator:

   Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not

HPLMN).
All cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS orders a PS detach with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
5	<-		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-2
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'Location Area not allowed'
8	->		DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
14		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)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22				No response from the UE to the request. This is checked for 10 seconds
23		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)

Step	Direction UE	Direction SS	Message	Comments
24	UE			Cell C is preferred by the UE. Step 25 is only performed for non-auto attach UE.
25	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26	UE			The UE initiates an attach automatically (See ICS), by MMI or AT command.
27	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6
29	->		ATTACH COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->		RRC CONNECTION REQUEST	
32		<-	RRC CONNECTION SETUP	
33	->		RRC CONNECTION SETUP COMPLETE	
34	->		PAGING RESPONSE	Mobile identity = TMSI-1
35		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->		RRC CONNECTION RELEASE COMPLETE	
37		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->		RRC CONNECTION REQUEST	
39		<-	RRC CONNECTION SETUP	
40	->		RRC CONNECTION SETUP COMPLETE	
41	->		SERVICE REQUEST	service type = "paging response"
42		<-	RRC CONNECTION RELEASE	
43	->		RRC CONNECTION RELEASE COMPLETE	
44	UE			The UE is switched off or power is removed (see ICS).
45	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
46	UE			The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Off cellNon-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE			The UE is powered up or switched on and initiates an attach (see ICS). Step 48 is only performed for non-auto attach UE.
48	UE		Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1
49	UE			UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 TMSI status = valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
51		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-7
52	->		ATTACH COMPLETE	
53		<-	PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->		RRC CONNECTION REQUEST	
55		<-	RRC CONNECTION SETUP	
56	->		RRC CONNECTION SETUP COMPLETE	
57	->		PAGING RESPONSE	Mobile identity = TMSI-2
58		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->		RRC CONNECTION RELEASE COMPLETE	
60		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->		RRC CONNECTION REQUEST	
62		<-	RRC CONNECTION SETUP	
63	->		RRC CONNECTION SETUP COMPLETE	
64	->		SERVICE REQUEST	service type = "paging response"
65		<-	RRC CONNECTION RELEASE	
66	->		RRC CONNECTION RELEASE COMPLETE	
67	UE			The UE is switched off or power is removed (see ICS).
68	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Off cellNon-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.3.2.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Location Area not allowed') from SS, UE shall:

- send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

1) UE is in the same location area.

At step9 and 18, UE shall:

- not perform location updating procedure.

At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for PS domain.

At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.3.2.6   PS detach / rejected / No Suitable Cells In Location Area

12.3.2.6.1 Definition

12.3.2.6.2   Conformance requirement

1. If the network performs a PS detach procedure with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 delete the stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.2 store the LA in the 'forbidden location areas for roaming'.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.6.3   Test purpose

To test the behaviour of the UE if the network sends the DETACH REQUEST message with the cause 'No Suitable Cells In Location Area'.

12.3.2.6.4   Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS sends a DETACH REQUEST message with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall not perform combined PS attach while in the same location area on the same PLMN. The SS checks that the UE shall perform PS attach when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'No Suitable Cells In Location Area'
7	->		DETACH COMPLETE	
8	UE			The following message are sent and shall be received on cell B. The UE initiates an attach automatically, by MMI or by AT command.
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
10	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-•
11	->		ATTACH COMPLETE	
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.3.2.6.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.3.2.7 PS detach / rejected / Roaming not allowed in this location area

12.3.2.7.1 Definition

12.3.2.7.2 Conformance requirement

1) If the network performs a PS detach procedure with the cause 'Roaming area not allowed in this location area' the User Equipment shall:

    1.1 delete any RAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number.

    1.2 set the GPRS update status to GU3 ROAMING NOT ALLOWED.

    1.3 reset the attach attempt counter.

    1.4 store the LAI in the list of "forbidden location areas for roaming".

    1.5 perform a PLMN selection.

2) If the UE is IMSI attached via MM procedures, the UE shall in addition:

    2.1 delete any TMSI, LAI and ciphering key sequence number.

    2.2 reset the location update attempt counter.

Reference

3GPP TS 24.008 clauses 4.7.4.2.

12.3.2.7.3 Test purpose

To test the behaviour of the UE if the network orders the PS detach procedure with the cause ' Roaming area not allowed in this location area '.

12.3.2.7.4 Method of test

Initial condition

System Simulator:

    Three cells (not simultaneously activated), cell A in MCC2/MNC1/LAC1/RAC2 (RAI-2, Not HPLMN), cell B in MCC2/MNC1/LAC1/RAC2 (RAI-7, Not HPLMN), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6, Not HPLMN).
All cells are operating in network operation mode I.

User Equipment:

    The UE has a valid IMSI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS orders a PS detach with the cause value ' Roaming area not allowed in this location area '. The SS checks that the UE does not perform combined PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off. CS services are not possible unless an IMSI attach procedure is performed.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
5	<-		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-2
6	->		ATTACH COMPLETE	
7	<-		DETACH REQUEST	Detach type = 're-attach not required' Cause 'Roaming not allowed in this location area '
8	->		DETACH ACCEPT	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	UE			No response from the UE to the request. This is checked for 10 seconds
14		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
15	UE			Cell B is preferred by the UE.
16	UE			The UE initiates an attach automatically, by MMI or by AT command.
17	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
18	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
22	UE			No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell C.

Step	Direction UE SS	Message	Comments
23	SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
24	UE		Cell C is preferred by the UE. Step 25 is only performed for non-auto attach UE.
25	UE	Registration on CS	See TS34.108 Parameter mobile identity is IMSI.
26	UE		The UE initiates an attach automatically (See ICS), by MMI or AT command.
27	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
28	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-6
29	->	ATTACH COMPLETE	
30	<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
31	->	RRC CONNECTION REQUEST	
32	<-	RRC CONNECTION SETUP	
33	->	RRC CONNECTION SETUP COMPLETE	
34	->	PAGING RESPONSE	Mobile identity = TMSI-1
35	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
36	->	RRC CONNECTION RELEASE COMPLETE	
37	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
38	->	RRC CONNECTION REQUEST	
39	<-	RRC CONNECTION SETUP	
40	->	RRC CONNECTION SETUP COMPLETE	
41	->	SERVICE REQUEST	service type = "paging response"
42	<-	RRC CONNECTION RELEASE	
43	->	RRC CONNECTION RELEASE COMPLETE	
44	UE		The UE is switched off or power is removed (see ICS).
45	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
46	UE		The following messages are sent and shall be received on cell B. Set the cell type of cell B to the "Serving cell". Set the cell type of cell C to the "Non-Suitable cell". (see note) Cell B is preferred by the UE.
47	UE		The UE is powered up or switched on and initiates an attach (see ICS). Step 48 is only performed for non-auto attach UE.
48	UE	Registration on CS	See TS34.108 Parameter mobile identity is TMSI-1
49	UE		UE initiates an attach automatically (see ICS), by MMI or AT commands.
50	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 TMSI status = valid TMSI available

Step	Direction UE SS	Message	Comments
51	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-7
52	->	ATTACH COMPLETE	
53	<-	PAGING TYPE1	Mobile identity = TMSI-2 Paging order is for CS services.
54	->	RRC CONNECTION REQUEST	
55	<-	RRC CONNECTION SETUP	
56	->	RRC CONNECTION SETUP COMPLETE	
57	->	PAGING RESPONSE	Mobile identity = TMSI-2
58	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
59	->	RRC CONNECTION RELEASE COMPLETE	
60	<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
61	->	RRC CONNECTION REQUEST	
62	<-	RRC CONNECTION SETUP	
63	->	RRC CONNECTION SETUP COMPLETE	
64	->	SERVICE REQUEST	service type = "paging response"
65	<-	RRC CONNECTION RELEASE	
66	->	RRC CONNECTION RELEASE COMPLETE	
67	UE		The UE is switched off or power is removed (see ICS).
68	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE: The definitions for "Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.3.2.7.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

-   initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = ' Roaming not allowed in this location area') from SS, UE shall:

-   send the DETACH ACCEPT message.

UE shall perform the following action depending on UE location.

  1) UE is in the same location area.

    At step9 and 18, UE shall:

    -   not perform location updating procedure.

    At step11 and 20, when the UE receives the paging message for CS domain, UE shall:

    -   not respond to the paging message for PS domain.

    At step13 and 22, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step17, UE shall;

- not perform PS attach procedure.

2) UE is in the new location area.

At step27, UE shall;

- perform the combined PS attach procedure.

At step34, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step41, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step50, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence

At step57, when the UE receives the paging message for CS domain with Mobile identity = IMSI, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step64, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-1, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4　Routing area updating procedure

This procedure is used to update the actual routing area of an UE in the network.

12.4.1　Normal routing area updating

The routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A or C that are IMSI attached for PS services only.

12.4.1.1a　Routing area updating / accepted

12.4.1.1a.1　Definition

12.4.1.1a.2　Conformance requirement

1) If the network accepts the routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

2) If the network accepts the routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.1a.3   Test purpose

To test the behaviour of the UE if the network accepts the routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.

2) Old P-TMSI / P-TMSI signature is not changed.

12.4.1.1a.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 acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. The UE will not answer signalling addressed to the old P-TMSI.

2) The UE sends a ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the P-TMSI.

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 (see ICS). If UE operation mode C not supported, goto step 22.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	

Step	Direction		Message	Comments
	UE	SS		
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)
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
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		<-	GMM INFORMATION	Message sent with P-TMSI-1
11b		->	GMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97
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.
14		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
15		UE		Cell A is preferred by the UE.
16		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
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
18		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services. PAGING TYPE 1 (used for NW-mode II).
18a		->	RRC CONNECTION REQUEST	
18b		<-	RRC CONNECTION SETUP	
18c		->	RRC CONNECTION SETUP COMPLETE	
19		->	SERVICE REQUEST	service type = "paging response"
19a		<-	RRC CONNECTION RELEASE	
19b		->	RRC CONNECTION RELEASE COMPLETE	
20		UE		The UE is switched off or power is removed (see ICS).
21		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
22		UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 21.
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.1a.5   Test requirements

At 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.

12.4.1.1b   Routing area updating / accepted / Signalling connection re-establishment

12.4.1.1b.1   Definition

12.4.1.1b.2   Conformance requirement

When the UE receives an indication from the lower layers that the RRC connection has been released with cause "Directed signalling connection re-establishment", then the UE shall enter PMM-IDLE mode and initiate immediately a normal routing area update procedure (the use of normal or combined procedure depends on the network operation mode in the current serving cell) regardless whether the routing area has been changed since the last update or not.

Reference

3GPP TS 24.008 clause 4.7.2.5, 4.7.5.1

12.4.1.1b.3   Test purpose

To test the behaviour of the UE if the UE receives a RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment".

12.4.1.1b.4   Method of test

Initial condition

System Simulator:

One cell(Cell A) in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I. ATT flag is set to 0.

User Equipment:

The UE has a valid TMSI, P-TMSI-1, P-TMSI-1 signature and RAI-1

Related ICS/IXIT statements

   Support of PS service   Yes/No
   UE operation mode A   Yes/No
   UE operation mode C   Yes/No
   Switch off on button   Yes/No
   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

     a)   The UE initiates a Service request procedure in order to establish the PS signalling connection for the upper layer signalling.

     b)   After the Service request procedure is complete, the SS sends the RRC CONNECTION RELEASE message with cause = "Directed signalling connection re-establishment" to the UE.

     c)   After the UE release the RRC connection, the UE initiate immediately a normal routing area update procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity =IMSI Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
10		SS		The SS initiates a security mode control procedure.
11	<-		RRC CONNECTION RELEASE	Release cause=Directed Signalling Connection Re-establishment
12	->		RRC CONNECTION RELEASE COMPLETE	
13	->		RRC CONNECTION REQUEST	
14	<-		RRC CONNECTION SETUP	
15	->		RRC CONNECTION SETUP COMPLETE	
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).

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

Specific message contents

None.

12.4.1.1a.5　　　　Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, UE shall;

- initiate the routing area updating procedure whether the routing area has been changed since the last update or not.

12.4.1.2　　Routing area updating / rejected / IMSI invalid / illegal ME

12.4.1.2.1　　Definition

12.4.1.2.2　　Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall consider USIM invalid for PS services until power is switched off or USIM is removed.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'Illegal ME', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.2.3　　Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Illegal ME'.

12.4.1.2.4　　Method of test

Initial condition

System Simulator:

　　Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
　　All three cells are operating in network operation mode II (in case of UE operation mode A)

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 (only if mode C not supported)
     USIM removal possible without powering down Yes/No
     Switch off on button   Yes/No
     Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Illegal ME'. The SS checks that the UE does not perform PS attach in the same or another PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5		<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Routing area identity = RAI-1
9		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Illegal ME'
10		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE			No response from the UE to the request. This is checked for 10 seconds.
12		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
13	UE			Cell C is preferred by the UE.
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
16	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
16a				Step 16b is only performed by UE in operation mode A
16b	UE		Registration on CS	See TS 34.108 Parameter mobile identity is IMSI.
17		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI

18	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:		The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.2.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

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

At step11, after the routing area updating procedure is rejected with GMM cause = 'Illegal ME', UE shall;

- not respond to the paging message for PS domain.

At step14, UE shall,

- not initiate PS attach procedure.

At step17, after the UE is powered up or USIM is replaced, UE shall;

- initiate the PS attach procedure.

12.4.1.3 Routing area updating / rejected / UE identity cannot be derived by the network

12.4.1.3.1 Definition

12.4.1.3.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'UE identity cannot be derived by the network', the User Equipment shall delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

Depending on the manufacturer the UE may or may not perform a PS attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.3.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'UE identity cannot be derived by the network'.

12.4.1.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in
MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II (in case of UE operation mode A).

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 (only if mode C not supported)
Automatic attach procedure when UE identity cannot be derived by the network   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a normal routing area updating with the cause value 'UE identity cannot be derived by the network'. The
UE detach locally. A new PS attach may be performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode C (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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	
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 ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'UE identity cannot be derived by the network'
11	UE			If an automatic attach procedure by the UE is not possible when the UE identity cannot be derived by the network (see ICS) goto step 19.
12	UE			An Automatic PS attach procedure is initiated (see ICS).
13	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
14	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
15	->		ATTACH COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
18				Stop the sequence
19	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
20	UE			No response from the UE to the request, as the UE has detached locally. This is checked for 10 seconds.
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", Suitable neighbour cell and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall;

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

UE shall perform the following actions depending on the implementation of the UE.

Case 1) UE supports an Automatic PS attach procedure.

At step13, UE shall;

- initiate the PS attach procedure.

Case 2) UE does not support an Automatic PS attach procedure.

At step20, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

12.4.1.4a Routing area updating / rejected / location area not allowed

12.4.1.4a.1 Definition

12.4.1.4a.2 Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

1.1 not perform PS attach when in the same location area.

1.2 delete the stored RAI, PS-CKSN, P-TMSI ,and P-TMSI signature and TMSI, LAI and ciphering key sequence number.

1.3 store the LA in the 'forbidden location areas for regional provision of service'.

1.4 not delete the list of "equivalent PLMNs".

1.5 perform a cell selection.

2) If the network rejects a routing area updating procedure from the User Equipment with the cause 'location area not allowed' the User Equipment shall:

2.1 perform PS attach when a new location area is entered.

2.2 delete the list of forbidden LAs after switch off (power off).

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4a.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'Location Area not allowed'.

To test that the UE deletes the list of forbidden LAs when power is switched off.

12.4.1.4a.4 Method of test

Initial condition

System Simulator:

~~Three~~ Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) , cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell D in MCC2/MNC1/LAC2/RAC1(RAI-6)~~.~~
All four cells are operating in network operation mode II.

The PLMN contains Cell D is equivalent to the PLMN that contains Cell C.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
UE operation mode C   Yes/No
USIM removal possible without powering down Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Location Area not allowed'. The SS checks that the UE does not perform PS attach while in the location area, performs PS attach when a new location area is entered and deletes the list of forbidden LAs when switched off.

Different types of UE may use different methods to periodically clear the list of forbidden location areas (e.g. every day at 12am). If the list is cleared while the test is being run, it may be necessary to re-run the test.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell C.
1		SS		Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell".
				Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell".
				Set the cell type of cell C to the "Serving cell"
				~~.~~ Set the cell type of cell D to the "Non-Suitable cell".
				(see note)
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 33.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell C is preferred by the UE.
3a	UE		Registration on CS	See TS 34.108
				This is applied only for UE in UE operation mode A.
4	->		ATTACH REQUEST	Attach type = 'PS attach'
				Mobile identity = IMSI
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached'
				Mobile identity = P-TMSI-1
				P-TMSI-1 signature
				Routing area identity = RAI-3
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell B to the "Serving cell".
				Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell".
				(see note)
8		SS		Cell B is preferred by the UE.
8a				The following step is only performed for UE Operation Mode A.
8b	UE		Registration on CS	See TS34.108
				Parameter mobile identity is IMSI
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating'
				P-TMSI-1 signature
				Routing area identity = RAI-3
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Location Area not allowed'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1
				PAGING TYPE1 (used for NW-mode II).
				Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.
13		SS		Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell".
				(see note)
13a	UE			The UE performs cell selection.
14	UE			Cell A is preferred by the UE.
15	UE			No ATTACH REQUEST sent to SS
				(SS waits 30 seconds)
				The following messages are sent and shall be received on cell C.
16		SS		Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell".
				Set the cell type of cell D~~C~~ to the "Serving cell".
				(see note)
16a	UE			The UE performs cell selection.

Step	Direction		Message	Comments
	UE	SS		
17	UE			Cell C is preferred by the UE.
17a				The following step is only performed for UE Operation Mode A.
17b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
	UE			The UE initiates a PS attach either automatically or manually (see ICS).
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-6̶3̶
20	->		ATTACH COMPLETE	
21	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
23	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
24	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3
25	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3̶6̶
26	->		ATTACH COMPLETE	
		SS		The following messages are sent and shall be received on cell A.
27				Set the cell type of cell A to the "Serving cell". Set the cell type of cell C̶ D to the "O̶f̶f̶ ̶c̶e̶l̶l̶Non-Suitable cell". (see note)
28				Cell A is preferred by the UE.
28a				The following step is only performed for UE Operation Mode A.
28b	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI
29	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-3
30	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated' Routing area identity = RAI-1
31	UE			The UE is switched off or power is removed (see ICS).
32	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
33		SS		The SS is set in network operation mode II.
34	UE			The UE is set in UE operation mode A (see ICS), cell A is switched off and the test is repeated from step 2 to step 32.
NOTE:				The definitions for "O̶f̶f̶ ̶c̶e̶l̶l̶Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.1.4a.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

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

At step12, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step12 and 15, when in the same location area, UE shall

- not perform PS attach procedure.

At step18, when a new location area is entered, UE shall

- perform the PS attach procedure.

At step24, when the USIM is replaced , UE shall;

- perform the PS attach procedure.

At step29, UE shall;

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

12.4.1.4b Routing area updating / rejected / No Suitable Cells In Location Area

12.4.1.4b.1 Definition

12.4.1.4b.2 Conformance requirement

1)If the network rejects a routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

1.41.1 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

1.2store the LA or the PLMN identity in the 'forbidden location areas for roaming'.

1.31.2 search for a suitable cell in a different location area on the same PLMN.

1.3 not delete equivalent PLMNs list.

Reference

3GPP TS 24.008 clauses 4.7.5.1.

12.4.1.4b.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.1.4b.4 Method of test

Initial condition

System Simulator:

Four cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC2~~1~~/MNC1/LAC2/RAC1 (RAI-6~~3~~), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4),

All three cells are operating in network operation mode II.

The PLMN contains Cell B is equivalent to the PLMN that contains Cell D.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
USIM removal possible without powering down   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform PS attach procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell".
				Set the cell type of cell B to the "Suitable neighbour cell".
				Set the cell type of cell C to the "Suitable neighbour cell".
				Set the cell type of cell D to the "Serving cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
5	->		ATTACH COMPLETE	
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area' The following message are sent and shall be received on cell ~~D.~~ B.
9	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1~~IMSI~~
10	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-~~3~~6
11	->		ATTACH COMPLETE	
12	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.4b.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

-    initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, UE shall;

- initiate the routing area updating procedure.

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.4.1.4c Routing area updating / rejected / PS services not allowed in this PLMN

12.4.1.4c.1 Definition

12.4.1.4c.2 Conformance requirement

If the network rejects a routing area updating procedure from the User Equipment with the cause 'PS service not allowed in this PLMN', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.

- shall set the PS update status to GU3 ROAMING NOT ALLOWED.

- store the PLMN identity in the "forbidden PLMNs for PS service" list.

UE shall perform the following actions depending on the update type, UE operation mode and network operation mode.

1) UE is in UE operation mode C

UE shall perform a PLMN selection instead of a cell selection.

2) UE is in UE operation mode A, update type = periodic updating and Network is in network operation mode I

UE shall set the timer T3212 to its initial value and restart it, if it is not already running.

3) UE is in UE operation mode A and Network is in network operation mode II.

UE shall be still IMSI attached for CS services in the network.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.4c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

12.4.1.4c.4 Method of test

Test procedure1

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

The UE is in UE operation mode C.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode C   Yes/No
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

. The SS rejects a routing area updating with the cause value 'PS services not allowed in this PLMN'. The SS checks that the UE performs PLMN selection.

Expected Sequence

Step	Direction UE / SS	Message	Comments
1	UE		The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2	SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-	ATTACH ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
6	SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ". Set the cell type of cell B to the "Serving cell". (see note)
7	UE		Cell B is preferred by the UE.
8	->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Routing area identity = RAI-1
9	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
10	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
11	UE		No response from the UE to the request. This is checked for 10 seconds.
12	SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Serving cell". (see note)
13	UE		The UE performs PLMN selection.
14	UE		No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
12	SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
17	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
18	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
19	->	ATTACH COMPLETE	
20	UE		The UE is switched off or power is removed (see ICS).
21	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

> NOTE: The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

Test procedure2

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2).
All three cells are operating in network operation mode II (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and Equivalent PLMN(MCC = 2, MNC=1).

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode C   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'PS services not allowed in this PLMN'. The SS checks that the UE sends ATTACH REQUEST message with Attach type = 'PS attach' to the SS

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The following messages are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". Set the cell type of cell D to the "Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
6	<-		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
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)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' Routing area identity = RAI-1
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
11	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 PAGING TYPE1 (used for NW-mode II). Paging order is for PS services.
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13		SS		Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell A to the "Serving cell". (see note)
14	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
15		SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
16	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
17	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
18	->		ATTACH COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).

20	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

Test procedure3

Initial condition

System Simulator:

    One cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) operating in network operation mode I.

User Equipment:

    The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

    The UE is in UE operation mode A.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout. The SS rejects a routing area updating with the cause value 'PS services not allowed in this PLMN'. The UE sets the timer T3212 to its initial value and restart it, if it is not already running.

Expected Sequence

Step	Direction UE SS	Message	Comments
1	UE		The UE is set in UE operation mode A (see ICS).
2	UE		The UE is powered up or switched on and initiates an attach (see ICS).
3	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->	ATTACH COMPLETE	
6	->	ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
7	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
8	SS		The SS verifies that the time between the attach and the periodic RA updating is T3312
9	->	ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
10	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'PS services not allowed in this PLMN'
11	UE		The UE is switched off or power is removed (see ICS).
12	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:		The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.4c.5   Test requirements

Test requirement for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

-    initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall;

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

At step11, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

-    not respond to the paging message for PS domain.

At step13, UE shall,

-    initiate PLMN selection.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure2

At step5, 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 step12, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

- not respond to the paging message for PS domain.

At step14, UE shall,

- not initiate PS attach procure.

At step17, UE shall;

- initiate the PS attach procedure.

Test requirement for Test procedure3

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, UE shall;

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

At step7, after the routing area updating procedure is rejected with GMM cause = 'PS service not allowed in this PLMN', UE shall;

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

At step8, UE shall,

- not initiate periodic routing area updating procedure.

At step9, UE shall;

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

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

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

At step11, UE shall,

- not initiate periodic routing area updating procedure.

12.4.1.4d   Routing area updating / rejected / Roaming not allowed in this location area

12.4.1.4d.1   Definition

12.4.1.4d.2   Conformance requirement

1) If the network rejects a routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

   1.1   shall not perform PS attach when in the same location area.

   1.2   shall store the LA in the 'forbidden location areas for roaming'.

   1.3   may perform PS attach when a new location area is entered.

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.1.4d.3   Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.1.4d.4   Method of test

12.4.1.4d.4.1   Test procedure1

Initial condition

System Simulator:

   Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode II.

User Equipment:

   The UE has a valid IMSI.

Related ICS/IXIT statements

   Support of PS service   Yes/No
   UE operation mode A   Yes/No
   Switch off on button   Yes/No
   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. A new attempt for a PS attach is not possible. Successful PS attach procedure is performed in another location area. The UE is moved back to the 1st location area. A routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1
4		->	ATTACH REQUEST	Attach type = ' PS attach ' Mobile identity =IMSI TMSI status = no valid TMSI available
5		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6		->	ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10		<-	ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE. Parameter mobile identity is TMSI-1.
20	UE			The UE initiates an attach automatically (see ICS), by MMI or by AT command.
21		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2
22		<-	ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
23		->	ATTACH COMPLETE	

Step	Direction UE SS	Message	Comments
24	<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->	RRC CONNECTION REQUEST	
26	<-	RRC CONNECTION SETUP	
27	->	RRC CONNECTION SETUP COMPLETE	
28	->	PAGING RESPONSE	Mobile identity = TMSI-1
29	<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->	RRC CONNECTION RELEASE COMPLETE	
31	<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
32	->	RRC CONNECTION REQUEST	
33	<-	RRC CONNECTION SETUP	
34	->	RRC CONNECTION SETUP COMPLETE	
35	->	SERVICE REQUEST	service type = "paging response"
36	<-	RRC CONNECTION RELEASE	
37	->	RRC CONNECTION RELEASE COMPLETE	
38	SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
39	UE		No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
40	<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
41	UE		No response from the UE to the request. This is checked for 10 seconds.
NOTE:		The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

12.4.1.4d.4.2   Test procedure2

Initial condition

System Simulator:

   Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6).
   Both cells are operating in network operation mode II.

User Equipment:

   The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

   Support of PS service   Yes/No
   UE operation mode A   Yes/No
   USIM removal possible without powering down Yes/No
   Switch off on button   Yes/No
   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a PS attach is possible on the cell on which the previous routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	UE		Registration on CS	See TS34.108 Parameter mobile identity is IMSI SS allocates Mobile identity = TMSI-1.
4	->		ATTACH REQUEST	Attach type = ' PS attach ' Mobile identity =IMSI TMSI status = no valid TMSI available
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
19	UE		Registration on CS	See TS 34.108 Location Update Procedure initiated from the UE.
20	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.
21	->		ATTACH REQUEST	Attach type = ' PS attach ' Mobile identity =IMSI TMSI status = no valid TMSI available
22	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile identity = TMSI-1
23	->		ATTACH COMPLETE	

Step	Direction UE	SS	Message	Comments
24		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
25	->		RRC CONNECTION REQUEST	
26		<-	RRC CONNECTION SETUP	
27	->		RRC CONNECTION SETUP COMPLETE	
28	->		PAGING RESPONSE	Mobile identity = TMSI-1
29		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->		RRC CONNECTION RELEASE COMPLETE	
31		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
32	->		RRC CONNECTION REQUEST	
33		<-	RRC CONNECTION SETUP	
34	->		RRC CONNECTION SETUP COMPLETE	
35	->		SERVICE REQUEST	service type = "paging response"
36		<-	RRC CONNECTION RELEASE	
37	->		RRC CONNECTION RELEASE COMPLETE	
38	UE			The UE is switched off or power is removed (see ICS).
39	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.4d.5 Test requirements

Test requirements for Test procedure1

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure with the information elements specified above Expected Sequence

At step12, when the SS rejects the routing area update procedure with GMM cause = 'Roaming not allowed in this area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the PS attach procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step41, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

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

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step21, UE shall:

- initiate the PS attach procedure.

At step28, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step35, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.1.5 Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes

12.4.1.5.1 Definition

12.4.1.5.2 Conformance requirement

When a routing area updating procedure is rejected with the attempt counter less than five, the UE shall repeat the routing area updating procedure after T3330 timeout.

When a T3330 timeout has occurred during a routing area updating procedure with the attempt counter five, the UE shall start timer T3302.

When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.5.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.1.5.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in
MCC1/MNC1/LAC1/RAC2 (RAI-4). The ATT-flag shall indicate that the MS should use IMSI attach/detach
procedures.
Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

The UE has a valid P-TMSI-1, 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 (only if mode C not supported)
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure (attempt counter zero).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter one) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter two) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter three) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure (attempt counter four) after T3311 expires.

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE initiates a new routing area updating procedure with attempt counter five (after T3311 expires).

The SS rejects the routing area updating procedure with a GMM cause 'congestion' code.

The UE shall not perform a new successful routing area updating procedure after T3311 seconds.

The UE initiates a routing area updating procedure with attempt counter zero after T3302 expires with the stored P-
TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3330; set to 15 seconds.

T3311; set to 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
2a	UE		Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
10		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
12	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
13		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
18	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
19		SS		The SS verifies that the time between the routing area updating requests is 15 seconds

Step	Direction		Message	Comments
	UE	**SS**		
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
21	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Congestion'
22		SS		The SS verifies that the UE does not attempt to attach for 10 minutes .
23		SS		The SS shall release the PS signalling connection.
23a	UE		Registration on CS	See TS 34.108 This step is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI.
24	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
25	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
26	->		ROUTING AREA UPDATE COMPLETE	
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach' An IMSI Detach must be performed for an UE in Operation Mode A either before or after the PS Detach
~~29~~	~~->~~		~~IMSI DETACH INDICATION~~	~~This step is only performed for UE Operation Mode A.~~ ~~MS establish a RRC connection on lower layers to perform an IMSI detach.~~ ~~Message not sent if power is removed.~~
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.5.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- perform the routing area updating procedure.

UE shall perform the following actions depending on the conditions described below.

Case 1) At step11, 14, 17 and 20, a routing area updating procedure is rejected from SS with the attempt counter less than five,

UE shall:

- repeat the routing area updating procedure after T3330 timeout

Case2) At step22 a routing area updating procedure is rejected from SS with the attempt counter five

At step22, UE shall:

- not initiate a routing area updating procedure.

Case3) At step24, the T3302 expires

UE shall:

- initiate the new routing area updating procedure

12.4.1.6 Routing area updating / abnormal cases / change of cell into new routing area

12.4.1.6.1 Definition

12.4.1.6.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.6.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.6.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C In MCC1/MNC1/LAC1/RAC3 (RAI-5).
All cells are operating in network operation mode II (in case of UE operation mode A).

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 initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 18.
2		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
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	
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 ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
10		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
11		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell C to the "Serving cell". (see note)
12		SS		Cell C is preferred by the UE.
13	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
14	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-5
15	->		ROUTING AREA UPDATE COMPLETE	
16	UE			The UE is switched off or power is removed (see ICS).
17	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
18		SS		The SS is set in network operation mode II.
19	UE			The UE is set in UE operation mode A (see ICS). Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell".The test is repeated from step 2 to step 17.
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.6.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area update procedure.

At step13, when change of cell into a new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.

- re-initiate new routing area updating procedure in the new routing area.

12.4.1.7 Routing area updating / abnormal cases / change of cell during routing area updating procedure

12.4.1.7.1 Definition

12.4.1.7.2 Conformance requirement

When a change of cell within a new routing area is performed before the routing area updating procedure is finished, the UE shall perform the cell update before the routing area updating procedure is finished.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.7.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.7.4 Method of test

Initial condition

System Simulator:

> Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) and cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> All three cells are 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 initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update within the routing area. The UE then waits for the ROUTING AREA UPDATE ACCEPT message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9		SS		No response to the ROUTING AREA UPDATE REQUEST message is given by the SS
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell C to the "Serving cell". (see note)
11		SS		Cell C is preferred by the UE.
12a	->		CELL UPDATE	Cell update cause = 'cell reselection'
12b	<-		CELL UPDATE CONFIRM	
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.1.7.5   Test requirements

At step4, when the UE is powered up or switched on, UE shall:

-   initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

-   initiate routing area update procedure.

At step12a, when a change of cell within a new routing area is performed, UE shall:

-   perform the cell update before the routing area updating procedure is finished.

12.4.1.8   Routing area updating / abnormal cases / P-TMSI reallocation procedure collision

12.4.1.8.1   Definition

12.4.1.8.2   Conformance requirement

When a P-TMSI REALLOCATION COMMAND message is received by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.1.

12.4.1.8.3   Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.1.8.4   Method of test

Initial condition

System Simulator:

    Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) and cell B in
    MCC1/MNC1/LAC1/RAC2 (RAI-4).
    Both cells are operating in network operation mode II (in case of UE operation mode A).

User Equipment:

    The UE has a valid IMSI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode C   Yes/No
    UE operation mode A   Yes/No (only if mode C not supported)
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a P-TMSI reallocation procedure. The UE shall ignore the P-TMSI reallocation procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach result = 'PS attach' Mobile identity = IMSI
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
10	<-		P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
11	UE			The UE ignores the P-TMSI reallocation command.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.1.8.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the routing area updating procedure.

At step11, when a P-TMSI REALLOCATION COMMAND message is received from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the P-TMSI reallocation procedure.

- continue with the routing area updating procedure.

12.4.2 Combined routing area updating

The combined routing area updating procedure is a GMM procedure used by PS UEs of UE operation mode A that are IMSI attached for PS and non-PS services. In order to use the combined routing area updating procedure, the network must operate in network operation mode I.

12.4.2.1 Combined routing area updating / combined RA/LA accepted

12.4.2.1.1 Definition

12.4.2.1.2 Conformance requirement

1) If the network accepts the combined routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

2) If the network accepts the combined routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.1.3 Test purpose

To test the behaviour of the UE if the network accepts the combined routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated.

2) Old P-TMSI / P-TMSI signature is not changed.

3) Mobile terminating CS call is allowed with IMSI.

4) Mobile terminating CS call is allowed with TMSI.

12.4.2.1.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

1) A combined PS attach procedure is performed. The UE sends a ROUTING AREA UPDATE REQUEST message. The SS reallocates the P-TMSI, unassigns the TMSI and returns ROUTING AREA UPDATE ACCEPT message with a new P-TMSI and IMSI. The UE acknowledge the new P-TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE - SS is performed by the new P-TMSI. For CS calls, the IMSI is used

2) The UE is CS paged in order to verify that the IMSI is used for CS calls.

3) A combined PS attach procedure is performed. The UE sends an ROUTING AREA UPDATE REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message without any P-TMSI and with a new TMSI. The UE acknowledge the new TMSI by sending ROUTING AREA UPDATE COMPLETE message. Further communication UE-SS is performed by the old P-TMSI. For CS calls, the new TMSI is used.

4) The UE is CS paged in order to verify that the TMSI is used for CS calls.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
9	->		ROUTING AREA UPDATE COMPLETE	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10a	->		RRC CONNECTION REQUEST	
10b	<-		RRC CONNECTION SETUP	
10c	->		RRC CONNECTION SETUP COMPLETE	
11	->		SERVICE REQUEST	service type = "paging response"
11a	<-		RRC CONNECTION RELEASE	
11b	->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction UE	Direction SS	Message	Comments
12		<-	PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
13	->		RRC CONNECTION REQUEST	
14		<-	RRC CONNECTION SETUP	
15	->		RRC CONNECTION SETUP COMPLETE	
16	->		PAGING RESPONSE	Mobile identity = IMSI
17		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
18	->		RRC CONNECTION RELEASE COMPLETE	
19	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)
20	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
21		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' No P-TMSI P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1
22	->		ROUTING AREA UPDATE COMPLETE	
23		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
23a	->		RRC CONNECTION REQUEST	
23b		<-	RRC CONNECTION SETUP	
23c	->		RRC CONNECTION SETUP COMPLETE	
24	->		SERVICE REQUEST	service type = "paging response"
24a		<-	RRC CONNECTION RELEASE	
24b	->		RRC CONNECTION RELEASE COMPLETE	
25		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
26	->		RRC CONNECTION REQUEST	
27		<-	RRC CONNECTION SETUP	
28	->		RRC CONNECTION SETUP COMPLETE	
29	->		PAGING RESPONSE	Mobile identity = TMSI-1
30		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->		RRC CONNECTION RELEASE COMPLETE	
32	UE			The UE is switched off or power is removed (see ICS).
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.1.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step9, UE shall:

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

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step16, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step20, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step22, UE shall:

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

At step24, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step29, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

12.4.2.2 Combined routing area updating / UE in CS operation at change of RA

12.4.2.2.1 Definition

12.4.2.2.2 Conformance requirement

PS UE in UE operation mode A that is in an ongoing CS transaction at change of routing area shall initiate the normal routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.2.3 Test purpose

To test the behaviour of the UE if the routing area is changed during an ongoing circuit switched transmission.

12.4.2.2.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

A combined PS attach procedure is performed. The UE in UE operation mode A initiates a CS call. The routing area change. The UE will perform the normal routing area updating procedure during the ongoing circuit-switched transaction.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1				Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			A CS call is initiated.
7		SS		Activate cell B with the same signal strength as cell A.
8	<-			Handover commanded by SS on to DCH of cell B The following messages are sent and shall be received on cell B.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
10	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
11	->		ROUTING AREA UPDATE COMPLETE	
12	<-		PAGING TYPE2	Mobile identity = P-TMSI-1 Paging order is for PS services.
13	->		SERVICE REQUEST	service type = "paging response"
14		SS		The SS initiates the RRC connection release.
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell during the CS connection, UE shall:

- initiate the normal routing area updating procedure.

12.4.2.3 Combined routing area updating / RA only accepted

12.4.2.3.1 Definition

12.4.2.3.2 Conformance requirement

1) If the network accepts the combined PS attach procedure, but GMM cause code 'IMSI unknown in HLR' is sent to the UE the User Equipment shall delete the stored TMSI, LAI and CKSN. The User Equipment shall consider USIM invalid for non-PS services until power is switched off or USIM is removed.

2) If the network accepts the combined PS attach procedure, but GMM cause code 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is sent to the UE, an UE operation mode A UE may perform an MM IMSI attach procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.3.3 Test purpose

Test porpose1

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'IMSI unknown in HLR'.

Test porpose2

To test the behaviour of the UE if the network accepts the routing area updating procedure with indication RA only, GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion'.

12.4.2.3.4 Method of test

Test Procedure1

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message. The SS allocates a P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1		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)
1a	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
8	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'IMSI unknown in HLR'
9	->		ROUTING AREA UPDATE COMPLETE	
10	<-		PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
10a	->		RRC CONNECTION REQUEST	
10b	<-		RRC CONNECTION SETUP	
10c	->		RRC CONNECTION SETUP COMPLETE	
11	->		SERVICE REQUEST	service type = "paging response"
11a	<-		RRC CONNECTION RELEASE	
11b	->		RRC CONNECTION RELEASE COMPLETE	
12	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for CS services.
13	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:			The definitions for "~~Off cell~~Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Test Procedure2

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells operating in network operation mode I. <u>T3212 is set to 6 minutes.</u>

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Automatic MM IMSI attach procedure for UE operation mode A UE   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message . The SS allocates a new P-TMSI signature and returns ROUTING AREA UPDATE ACCEPT message. GMM cause 'MSC temporarily not reachable', 'Network failure' or 'Congestion' is indicated from SS. The cause code is arbitrarily chosen. This procedure is repeated until the routing area updating attempt counter is equal to five. An UE operation mode A UE may perform an MM IMSI attach procedure (according to the ICS statement). Further communication UE - SS is performed by the P-TMSI. The existence of a signalling channel is verified by a request for mobile identity. It is further verified that the UE after a successful IMSI attach procedure can perform CS services.

Expected Sequence

Dependent whether the option 'Automatic MM IMSI attach procedure for UE operation mode A UE' is not supported or not, the steps 1-13 or 14-35 apply depending on manufacturer (see ICS).

Step	Direction		Message	Comments
	UE	**SS**		
1		SS		The following messages are sent and shall be received on cell A Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~<u>Non-Suitable cell</u>". (see note)
1a	UE			The UE is set in UE operation mode A and no automatic MM IMSI attach procedure is indicated (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity =IMSI TMSI status = no valid TMSI available
4		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5		->	ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "<u> Suitable neighbour cell </u> ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7		->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	SS		
8		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
9	->		ROUTING AREA UPDATE COMPLETE	
10				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
12		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
13	->		ROUTING AREA UPDATE COMPLETE	
14				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
16		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
17	->		ROUTING AREA UPDATE COMPLETE	
18				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
20		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
21	->		ROUTING AREA UPDATE COMPLETE	
22				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311

Step	Direction		Message	Comments
	UE	**SS**		
23	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
24	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
25	->		ROUTING AREA UPDATE COMPLETE	
26				The routing area updating attempt counter =5. The combined routing area updating procedure is reinitialised at the expiry of T3311
27	UE			The UE is switched off or power is removed (see ICS).
28	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach' Stop the sequence.
				The following messages are sent and shall be received on cell B
29	UE			The UE is set in UE operation mode A and automatic MM IMSI attach procedure is indicated (see ICS).
30	UE			The UE is powered up or switched on and initiates an attach (see ICS).
31	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or 'PS attach while IMSI attached' Mobile identity = IMSI TMSI status = no valid TMSI available
32	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
33	->		ATTACH COMPLETE	
34		SS		The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
35	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
36	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
37	->		ROUTING AREA UPDATE COMPLETE	
38				The routing area updating attempt counter =1. The combined routing area updating procedure is reinitialised at the expiry of T3311
39	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available

Step	Direction		Message	Comments
	UE	**SS**		
40		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
41	->		ROUTING AREA UPDATE COMPLETE	
42				The routing area updating attempt counter =2. The combined routing area updating procedure is reinitialised at the expiry of T3311
43	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
44		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
45	->		ROUTING AREA UPDATE COMPLETE	
46				The routing area updating attempt counter =3. The combined routing area updating procedure is reinitialised at the expiry of T3311
47	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating• with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
48		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
49	->		ROUTING AREA UPDATE COMPLETE	
50				The routing area updating attempt counter =4. The combined routing area updating procedure is reinitialised at the expiry of T3311
51	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating•with IMSI attach' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
52		<-	ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 GMM cause = 'MSC temporarily not reachable', 'Network failure' or 'Congestion' (arbitrarily chosen)
53	->		ROUTING AREA UPDATE COMPLETE	
54				The routing area updating attempt counter =5.

Step	Direction		Message	Comments
	UE	SS		
55	UE		Registration on CS	Optional step. See TS 34.108 This is applied only for UE in UE operation mode A. Parameter mobile identity is TMSI-1. Steps 56 - 62 are only performed if the UE has performed the Registration Procedure in step 55.
56		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
57	->		RRC CONNECTION REQUEST	
58		<-	RRC CONNECTION SETUP	
59	->		RRC CONNECTION SETUP COMPLETE	
60	->		PAGING RESPONSE	Mobile identity = TMSI-1
61		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
62	->		RRC CONNECTION RELEASE COMPLETE	
63	UE			The UE is switched off or power is removed (see ICS).
64	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Off cellNon-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.2.3.5 Test requirements

Test requirements for Test Procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step9, UE shall:

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

At step11, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step13, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

Test requirements for Test Procedure2

At step3 and 31, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step6 and 35, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area updating procedure.

At step11, 15, 19 and 23, UE shall:

- re-initiate the combined routing area updating procedure.

At step39, 43, 47 and 51, UE shall:

- re-initiate the combined routing area updating procedure.

At step55, UE shall:

- perform MM location updating procedure.

At step60, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

12.4.2.4 Combined routing area updating / rejected / PLMN not allowed

12.4.2.4.1 Definition

12.4.2.4.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'PLMN not allowed' the User Equipment shall:

1.1 not perform combined GPRA attach when switched on in the same location area or PLMN.

1.2 delete the stored RAI, PS-CKSN, P-TMSI, P-TMSI signature, TMSI CKSN and LAI.

1.3 store the PLMN in the 'forbidden PLMN list'.

2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.4.3 Test purpose

To test the behaviour of the UE if the network rejects the combined routing area updating procedure of the UE with the cause 'PLMN not allowed'.

12.4.2.4.4 Method of test

Initial condition

System Simulator:

Five cells (not simultaneously activated), cell A in MCC1/MNC2/LAC1/RAC1 (RAI-8), cell B in MCC1/MNC2/LAC1/RAC2 (RAI-10), cell C in MCC1/MNC2/LAC2/RAC1 (RAI-9) and cell D in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell E in MCC1/MNC3/LAC1/RAC1 (RAI-11).

The PLMN containing Cells A, B and C is equivalent to the PLMN that contains Cell E.
All five cells are operating in network operation mode I

User Equipment:

    The UE has a valid IMSI.

Related ICS/IXIT statements

    Support of PS service   Yes/No
    UE operation mode A   Yes/No
    Switch off on button   Yes/No
    Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PLMN not allowed'. The SS checks that the UE does not perform PS attach if activated in the same PLMN. The SS checks that the UE does not perform IMSI attach if activated in the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell D to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-8 Mobile identity = TMSI-1 Equivalent PLMN: MCC = 1, MNC=3
5	->		ATTACH COMPLETE	
7		SS		The following messages are sent and shall be received on cell B and cell E. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". Set the cell type of cell E to the "Suitable neighbour cell". (see note)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-8 TMSI status = valid TMSI available
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'PLMN not allowed'
11	UE			The UE initiates an attach by MMI or AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
12a		SS		The SS deactivates cell E. Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell".
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
16	UE			Cell C is preferred by the UE.
17	UE			The UE initiates an attach by MMI or by AT command.
18	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
19	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.

Step	Direction		Message	Comments
	UE	**SS**		
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21	SS			The following messages are sent and shall be received on cell A. Set the cell type of cell A to the "Serving cell". Set the cell type of cell C to the "Off cellNon-Suitable cell". (see note)
22	UE			Cell A is preferred by the UE.
23	UE			The UE initiates an attach by MMI or by AT command.
24	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
25		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
26	UE			No response from the UE to the request. This is checked for 10 seconds.
27	SS			The following messages are sent and shall be received on cell D. Set the cell type of cell A to the "Off cellNon-Suitable cell". Set the cell type of cell D to the "Serving cell". (see note)
28	UE			Cell D is preferred by the UE.
28a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
29	UE			The UE initiates an attach automatically (see ICS), by MMI or by AT command.
30		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
31		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile identity = IMSI
32		->	ATTACH COMPLETE	
33	UE			The UE is switched off or power is removed (see ICS).
34		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:				The definitions for "Off cellNon-Suitable cell", "Serving cell" and "Suitable neighbour cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.4.2.4.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- -initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step 10, the UE shall delete the equivalent PLMN list (MCC=1, MNC=3).

At step 12, the UE shall not initiate a PS attach procedure to cell E.

At step 18 and 24, UE shall:

- not initiate a PS attach procedure.

At step14, 20 and 26, when the UE receives the paging message for PS domain, UE shall:

- not respond to the paging message for PS domain.

At step20, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step30, UE shall:

- perform the PS attach procedure.

12.4.2.5a Combined routing area updating / rejected / roaming not allowed in this location area

12.4.2.5a.1 Definition

12.4.2.5a.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'roaming not allowed in this location area' the User Equipment:

    1.1 shall not perform combined PS attach when in the same location area.

    1.2 ~~shall delete the stored RAI, PS-CKSN, P-TMSI P-TMSI signature, TMSI, CKSN and LAI.~~

    1.2~~3~~ shall store the LA in the 'forbidden location areas for roaming'.

    1.3~~4~~ may perform combined PS attach when a new location area is entered.

2) The User Equipment shall reset the list of 'Forbidden location areas for roaming' when switched off or when the USIM is removed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.5a.3 Test purpose

Test purpose1

To test that on receipt of a rejection using the 'Roaming not allowed in this area' cause code, the UE ceases trying a routing area updating procedure on that location area. Successful combined routing area updating procedure is possible in other location areas.

Test purpose2

To test that if the UE is switched off or the USIM is removed the list of 'forbidden location areas for roaming' is cleared.

12.4.2.5a.4 Method of test

12.4.2.5a.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. A new attempt for a combined PS attach is not possible. Successful combined PS attach procedure is performed in another location area. The UE is moved back to the 1st location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
				The following messages are sent and shall be received on cell A.
17		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
18	UE			Cell A is preferred by the UE.
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
19	UE			The UE initiates an attach automatically (see ICS), by MMI or by AT command.
20	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-2IMSI TMSI status = no valid TMSI available
21	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
22	->		ATTACH COMPLETE	

Step	Direction UE	SS	Message	Comments
23		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
24	->		RRC CONNECTION REQUEST	
25		<-	RRC CONNECTION SETUP	
26	->		RRC CONNECTION SETUP COMPLETE	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
28		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
29	->		RRC CONNECTION RELEASE COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for PS services.
30a	->		RRC CONNECTION REQUEST	
30b		<-	RRC CONNECTION SETUP	
30c	->		RRC CONNECTION SETUP COMPLETE	
31	->		SERVICE REQUEST	service type = "paging response"
31a		<-	RRC CONNECTION RELEASE	
31b	->		RRC CONNECTION RELEASE COMPLETE	
32		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
33	UE			No ROUTING AREA UPDATE REQUEST sent to SS (SS waits 30 seconds).
34		<-	PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
35	UE			No response from the UE to the request. This is checked for 10 seconds.
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

12.4.2.5a.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell B in MCC2/MNC1/LAC2/RAC1 (RAI-6). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
USIM removal possible without powering down Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->		ATTACH COMPLETE	
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)
8	UE			Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
10	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'Roaming not allowed in this area'
11	UE			The UE initiates an attach by MMI or by AT command.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
18	UE			The UE gets the USIM replaced, is powered up or switched on.
18a	UE		Registration on CS	See TS 34.108 This step is applied only for non-auto attach UE. Location Update Procedure initiated from the UE.
19	UE			The UE initiates an attach automatically (see ICS) by MMI or AT command.
20	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
21	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-6 Mobile identity = TMSI-1
22	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
23		<-	PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for CS services.
24	->		RRC CONNECTION REQUEST	
25		<-	RRC CONNECTION SETUP	
26	->		RRC CONNECTION SETUP COMPLETE	
27	->		PAGING RESPONSE	Mobile identity = TMSI-1
28		<-	RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
29	->		RRC CONNECTION RELEASE COMPLETE	
30		<-	PAGING TYPE1	Mobile identity = P-TMSI-1
30a	->		RRC CONNECTION REQUEST	
30b		<-	RRC CONNECTION SETUP	
30c	->		RRC CONNECTION SETUP COMPLETE	
31	->		SERVICE REQUEST	service type = "paging response"
31a		<-	RRC CONNECTION RELEASE	
31b	->		RRC CONNECTION RELEASE COMPLETE	
32	UE			The UE is switched off or power is removed (see ICS).
33	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.5a.5   Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence

At step12, when the SS rejects the combined routing area update procedure with GMM cause = 'Roaming not allowed in this area', UE shall:

- not initiate a PS attach procedure.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

At step35, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step9, UE shall:

- initiate the combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence.

At step14, when the UE receives the paging message for PS domain, UE shall;

- not respond to the paging message for PS domain.

At step16, when the UE receives the paging message for CS domain, UE shall:

- not respond to the paging message for CS domain.

At step20, UE shall:

- initiate the combined PS attach procedure.

At step27, when the UE receives the paging message for CS domain, UE shall;

- respond to the paging message for CS domain by sending the PAGING RESPONSE message.

At step31, when the UE receives the paging message for PS domain, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.4.2.5b Combined routing area updating / rejected / No Suitable Cells In Location Area.

12.4.2.5b.1 Definition

12.4.2.5b.2 Conformance requirement

1) If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'No Suitable Cells In Location Area', the User Equipment shall:

   1.1 delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.

   1.12 store the LA or the PLMN identity in the 'forbidden location areas for roaming'.

   1.23 search for a suitable cell in a different location area on the same PLMN.

2) An MS that receives a ROUTING AREA UPDATE REJECT message stops timer T3330, enters state MM IDLE and for all causes except #12, #14 and #15 deletes the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5b.3   Test purpose

To test the behaviour of the UE if the network rejects a combined routing area updating procedure of the UE with the cause 'No Suitable Cells In Location Area'.

To test that the UE deletes the list of forbidden LAs when power is switched off'.

12.4.2.5b.4   Method of test

Initial condition

System Simulator:

> Five cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2), cell D in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell E in MCC1/MNC2/LAC1/RAC1 (RAI-5).

> All five cells are operating in network operation mode II.

> The PLMN contains Cell A, B and D is equivalent to the PLMN that contains Cell E.

User Equipment:

> The UE has valid IMSI.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> USIM removal possible without powering down Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform PS attach procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following message are sent and shall be received on cell D.
1		SS		Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "Serving cell". Set the cell type of cell E to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell D is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4 Mobile identity = IMSI Equivalent PLMN: MCC = 1, MNC=2
5	->		ATTACH COMPLETE	
6		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". Set the cell type of cell D to the "~~Off cell~~Non-Suitable cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C Cell A is preferred by the UE.
7	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4
8	<-		ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area' The following message are sent and shall be received on cell B.
9	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1~~IMSI~~
10	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-3 Equivalent PLMN: MCC = 1, MNC=2
11	->		ATTACH COMPLETE	
12		SS		Set the cell type of cell D to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell E to the "Suitable neighbour cell". (note) The SS deactivates Cell B and activates Cell D and Cell E The SS configures power level of each Cell as follows. Cell D > Cell E
13				Cell D is preferred by the UE.

14	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4
15	<-	ROUTING AREA UPDATE REJECT	GMM cause = 'No Suitable Cells In Location Area'
16			The following message are sent and shall be received on cell E.
17	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attached' Mobile identity = IMSI
18	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-3 P-TMSI-3 signature Routing area identity = RAI-5 Equivalent PLMN: MCC=1. MNC=1
19	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:		The definitions for "Suitable neighbour cell", "Serving cell" and "~~Off cell~~Non-Suitable cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.5b.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- - initiate the combined routing area update procedure.

At step 8, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step9, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- - perform the PS attach procedure.

At step 15, the UE shall maintain the equivalent PLMN list (MCC=1, MNC=2).

At step 17, when the UE enters a suitable cell in a different but equivalent PLMN (MCC=1, MNC=2), UE shall:

- perform the PS attach procedure.

12.4.2.5c Combined routing area updating / rejected / Location area not allowed

12.4.2.5c.1 Definition

12.4.2.5c.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'Location area not allowed', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.

- set the PS update status to GU3 ROAMING NOT ALLOWED.

- delete any TMSI, LAI and ciphering key sequence number.

- store the LAI in the list of "forbidden location areas for regional provision of service"

- not delete the list of "equivalent PLMNs".

- perform a cell selection.

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

12.4.2.5c.4 Method of test

Initial condition

System Simulator:

- Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
  All three cells are operating in network operation mode I (in case of UE operation mode A).

- The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

- The UE has a valid IMSI.and Equivalent PLMN(MCC = 2, MNC=1).

- The UE is in UE operation mode A.

Related ICS/IXIT statements

- Support of PS service Yes/No
  UE operation mode A Yes/No
  Switch off on button Yes/No
  Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Location area not allowed'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction UE SS	Message	Comments
			The following messages are sent and shall be received on cell A.
1	UE		The UE is set in UE operation mode A (see ICS).
2	SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
5	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->	ATTACH COMPLETE	
6	SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE		Cell B is preferred by the UE.
8	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
9	<-	ROUTING AREA UPDATE REJECT	GMM cause = Location area not allowed '
10	UE		The UE initiates an attach by MMI or by AT command.
12	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note)
14	UE		The UE performs cell selection. The following messages are sent and shall be received on cell C.
15	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
16	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile identity = TMSI-2
17	->	ATTACH COMPLETE	
18	UE		The UE is switched off or power is removed (see ICS).
19	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5c.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined PS / IMSI attached' to the equivalent cell.

12.4.2.5d Combined routing area updating / rejected / PS services not allowed in this PLMN

12.4.2.5c.1 Definition

12.4.2.5c.2 Conformance requirement

If the network rejects a combined routing area updating procedure from the User Equipment with the cause 'Location area not allowed', the User Equipment shall:

- delete any RAI, P-TMSI, P-TMSI signature, and PS ciphering key sequence number stored.

- set the PS update status to GU3 ROAMING NOT ALLOWED.

- store the PLMN identity in the "forbidden PLMNs for GPRS service" list.

- not delete the list of "equivalent PLMNs".

Reference

3GPP TS 24.008 clauses 4.7.5.2.4

12.4.2.5c.3 Test purpose

To test the behaviour of the UE if the network rejects the routing area updating procedure of the UE with the cause 'PS services not allowed in this PLMN'.

12.4.2.5c.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6).
All three cells are operating in network operation mode I (in case of UE operation mode A).

The PLMN contains Cell C is equivalent to the PLMN that contains Cell A.

User Equipment:

The UE has a valid IMSI.and Equivalent PLMN(MCC = 2, MNC=1).

The UE is in UE operation mode A.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'PS service not allowed in this PLMN'. The SS checks that the UE performs combined PS attach when the UE enters a equivalent PLMN.

Expected Sequence

Step	Direction UE SS	Message	Comments
1	UE		The following messages are sent and shall be received on cell A. The UE is set in UE operation mode A (see ICS).
2	SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
3	UE		The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
5	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Mobile identity = TMSI-1
5	->	ATTACH COMPLETE	
6	SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE		Cell B is preferred by the UE.
8	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-2
9	<-	ROUTING AREA UPDATE REJECT	GMM cause ='PS service not allowed in this PLMN'
10	UE		The UE initiates an attach by MMI or by AT command.
12	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
13	SS		Set the cell type of cell A to the "Non-Suitable cell". Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the "Serving cell". (see note) The following messages are sent and shall be received on cell C.
14	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
15	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-1 P-TMSI-2 signature Routing area identity = RAI-6 Mobile identity = TMSI-2
16	->	ATTACH COMPLETE	
17	UE		The UE is switched off or power is removed (see ICS).
18	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Non-Suitable cell", "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".		

Specific message contents

None.

12.4.2.5c.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the Combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, UE shall:

- initiate the combined routing area update procedure.

At step 12, the UE shall:

- not initiate combined PS attach procure.

At step 14, the UE shall:

- perform combined PS attach procedure with Mobile identity = IMSI and Attach result = 'Combined PS / IMSI attached' to the equivalent cell.

12.4.2.6 Combined routing area updating / abnormal cases / access barred due to access class control

12.4.2.6.1 Definition

12.4.2.6.2 Conformance requirement

1) The UE shall not perform combined routing area updating procedure, but stays in the current serving cell and applies normal cell reselection process.

2) The User Equipment shall perform the combined routing area updating procedure when:

   2.1 Access is granted.

   2.2 Cell is changed.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.6.3 Test purpose

Test purpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test purpose2

To test the behaviour of the UE in case of access class control (cell is changed).

12.4.2.6.4 Method of test

12.4.2.6.4.1 Test procedure1

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is initially indicated to be barred on Cell B.

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has Access Class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has Access Class x barred.
Both cells are operating in network operation mode I.

User Equipment:

The UE has valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

The SS indicates that access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the " Suitable neighbour cell ~~Off cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The access class x is not barred anymore.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:			The definitions for "~~Off cell~~ Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.6.4.2   Test procedure2

Initial condition

An access class x (0-15) is arbitrarily chosen. The USIM is programmed with this access class x. Communication with User Equipments using access class x is indicated to be barred on cell B.

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1) has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4) has access class x not barred.
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

A PS attach procedure is performed. The routing area is changed. The SS indicates access class x barred. A routing area updating procedure is not performed.

A cell change is performed into a cell where access class x is not barred. A routing area updating procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell C to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "~~Off~~ Suitable neighbour cell ~~cell~~". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class x is barred (SS waits 30 seconds).
9		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "~~Off cell~~ Suitable neighbour cell ". Set the cell type of cell C to the "Serving cell". (see note)
10	UE			Cell C is preferred by the UE.
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:	The definitions for "~~Off cell~~ Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.2.6.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred , UE shall:

- not perform the combined routing area updating procedure.

At step10, when the access class x is not barred, UE shall:

- perform the combined routing area updating procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the access class x is barred UE shall:

- not perform the combined routing area updating procedure.

At step11, when the serving cell is changed, UE shall:

- perform the combined routing area updating procedure.

12.4.2.7 Combined routing area updating / abnormal cases / attempt counter check / procedure timeout

12.4.2.7.1 Definition

12.4.2.7.2 Conformance requirement

1) When a T3330 timeout has occurred during a routing area updating procedure, the UE shall repeat the routing area updating procedure after T3330 timeout until the procedure is repeated five times.

2) When a routing area updating procedure is repeated five times, the routing area updating attempt counter is incremented and five more routing area updating procedures are performed. This procedure is repeated until the routing area updating attempt counter is five, the UE shall then start timer T3302.

3) When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.7.3 Test purpose

To test the behaviour of the UE with respect to the attempt counter.

12.4.2.7.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode I.

User Equipment:

>   The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

>   Support of PS service   Yes/No
>   UE operation mode A   Yes/No
>   Switch off on button   Yes/No
>   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure (routing area updating attempt counter zero). The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter one) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter two) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter three) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and T3311 is started.

The UE initiates a new routing area updating procedure (routing area updating attempt counter four) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. The UE restarts the routing area updating procedure four times. The SS never answers with ROUTING AREA UPDATE ACCEPT message before T3330 timeout. After five consecutive routing area update procedures, the routing area updating attempt counter is incremented and as the routing area updating attempt counter is five. T3302 is started.

The UE performs a Location Update procedure.

The UE initiates a routing area updating procedure with routing area updating attempt counter zero after T3302 expires with the stored P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 12 minutes.

T3311; 15 seconds.

T3330; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE. K = 1.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k (k is not visible. It is only used for clarifying the sequence.) Retransmission counter = 0
9		SS		No response is given from the SS.
10		SS		The SS verifies that the time between the RA update requests is T3330seconds
11	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 1
12		SS		No response is given from the SS.
13		SS		The SS verifies that the time between the RA update requests is T3330seconds
14	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 2
15		SS		No response is given from the SS.
16		SS		The SS verifies that the time between the RA update requests is T3330seconds
17	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 3
18		SS		No response is given from the SS.
19		SS		The SS verifies that the time between the RA update requests is T3330seconds

Step	Direction		Message	Comments
	UE	**SS**		
20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available Routing area updating attempt counter = k Retransmission counter = 4
21		SS		No response is given from the SS.
22		SS		The SS verifies that the time between the RA update requests is T3311 + T3330 seconds.
23		SS		Step 8 – 22 is repeated four times with k = 2, k = 3, k = 4 and k = 5
23a	UE		Registration on CS	The UE performs a normal location updating procedure. See TS 34.108
24		SS		The SS verifies that the time between the RA update requests is T3302 + T3330 seconds
25	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
26	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
27	->		ROUTING AREA UPDATE COMPLETE	
28	UE			The UE is switched off or power is removed (see ICS).
29	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
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.

12.4.2.7.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

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

UE shall perform the following actions depending on the conditions described below.

Case 1) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter less than five

At step11, 14, 17 and 20, UE shall:

- repeat the combined routing area updating procedure after the timer T3330 timeout

Case2) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter less than five and the Retransmission counter five

At step 22, UE shall:

- not repeat the combined routing area updating procedure.

Case 3) A timer T3311 timeout has occurred and the Routing area attempt counter is less than five,

At step23, UE shall:

- repeat the combined routing area updating procedure

Case 4) A timer T3330 timeout has occurred during a combined routing area updating procedure with the Routing area attempt counter five and the Retransmission counter five.

At step24, UE shall:

- not initiate a routing area updating procedure.

Case5) The timer T3302 expires

At step25, UE shall:

- initiate the new routing area updating procedure

12.4.2.8 Combined routing area updating / abnormal cases / change of cell into new routing area

12.4.2.8.1 Definition

12.4.2.8.2 Conformance requirement

When a change of cell into a new routing area is performed before the routing area updating procedure is finished, the UE shall abort the routing area updating procedure and re-initiate it in the new routing area.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.8.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.8.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC3 (RAI-5).
All three cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update into a new routing area. The UE shall re-initiate a routing area updating procedure in the new routing area. The UE shall not increment the attempt counter.

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Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A.
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		No response id given from the SS.
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11	UE			The RF level of cell B is lowered, and the RF level of cell C is increased, until cell C is preferred by the UE.
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-5
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.8.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate the routing area update procedure.

At step12, when change of cell into new routing area is performed before the routing area updating procedure is finished, UE shall:

- abort the routing area updating procedure.

- re-initiate new routing area updating procedure in the new routing area.

12.4.2.9 Combined routing area updating / abnormal cases / change of cell during routing area updating procedure

12.4.2.9.1 Definition

12.4.2.9.2 Conformance requirement

When a change of cell within new routing area is performed before the routing area updating procedure is finished, the UE shall perform the cell update before the routing area updating procedure is finished.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.9.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.9.4 Method of test

Initial condition

System Simulator:

> Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> All three cells are operating in network operation mode I.

User Equipment:

> The UE has a valid IMSI. UE is Idle Updated on cell A.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure. The ROUTING AREA UPDATE ACCEPT message is delayed from the SS. The UE performs a cell update within the routing area. The UE then waits for the ROUTING AREA UPDATE ACCEPT message.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		No response id given from the SS.
10		SS		The following messages are sent and shall be received on cell C. Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Serving cell". (see note)
11	UE			The RF level of cell B is lowered until cell C is preferred by the UE.
12a	->		CELL UPDATE	Cell update cause = 'cell reselection'
12b	<-		CELL UPDATE CONFIRM	
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.9.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step12a, when a change of cell within a new routing area is performed before the routing area updating procedure is finished, UE shall:

- perform the cell update.

12.4.2.10 Combined routing area updating / abnormal cases / PS detach procedure collision

12.4.2.10.1 Definition

12.4.2.10.2 Conformance requirement

1) When a detach request is received with cause 'PS detach' or 'combined PS/IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

2) When a detach request is received with cause 'IMSI detach' by the UE while waiting for a ROUTING AREA UPDATE ACCEPT message, the UE shall ignore the detach request and continue with the routing area updating procedure.

Reference

3GPP TS 24.008 clause 4.7.5.2.

12.4.2.10.3 Test purpose

To test the behaviour of the UE in case of procedure collision.

12.4.2.10.4 Method of test

12.4.2.10.4.1 Test procedure1

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'PS detach' or 'combined PS/IMSI detach'. The UE shall terminate the routing area updating procedure and continue with the PS detach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	SS			The following messages are sent and shall be received on cell A.
	SS			Set the cell type of cell A to the "Serving cell".
				Set the cell type of cell B to the "Suitable neighbour cell".
				(see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach'
				Mobile identity =IMSI
				TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached'
				Mobile identity = P-TMSI-2
				P-TMSI-2 signature
				Routing area identity = RAI-1
				Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6	SS			The following messages are sent and shall be received on cell B.
				Set the cell type of cell A to the "Suitable neighbour cell".
				Set the cell type of cell B to the "Serving cell".
				(see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating'
				P-TMSI-2 signature
				Routing area identity = RAI-1
				TMSI status = no valid TMSI available
9	SS			The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach not required'
11	->		DETACH ACCEPT	
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.4.2.10.4.2 Test procedure2

Initial condition

System Simulator:

   Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode I.

User Equipment:

   The UE has a valid P-TMSI, P-TMSI signature and RAI.

Related ICS/IXIT statements

> Support of PS service Yes/No
> UE operation mode A Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a routing area updating procedure. The SS does not answer the routing area updating procedure, but initiates a PS detach procedure with cause 'IMSI detach'. The UE shall ignore the detach procedure and continue with the routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		SS		The following messages are sent and shall be received on cell A.
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
2	UE			The UE is powered up or switched on and initiates an attach (see ICS.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =IMSI TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Mobile identity = IMSI
5	->		ATTACH COMPLETE	
6		SS		The following messages are sent and shall be received on cell B. Set the cell type of cell A to the "Suitable neighbour cell". Set the cell type of cell B to the "Serving cell". (see note)
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
9		SS		The SS ignores the ROUTING AREA UPDATE REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 'IMSI detach'
11	UE			The UE ignores the DETACH REQUEST message and continue the routing area updating procedure.
12	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
13	->		ROUTING AREA UPDATE COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.2.10.5 Test requirements

Test requirements for Test procedure1

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, when the UE receives a DETACH REQUEST message with cause 'PS detach' or 'combined PS/IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- terminate the routing area updating procedure

- continue with the PS detach procedure.

Test requirements for Test procedure2

At step3, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step8, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- initiate routing area update procedure.

At step11, the UE receives a DETACH REQUEST message with cause 'IMSI detach' from SS while waiting for a ROUTING AREA UPDATE ACCEPT message, UE shall:

- ignore the detach request procedure.

- continue with the routing area updating procedure.

12.4.3 Periodic routing area updating

12.4.3.1 Periodic routing area updating / accepted

12.4.3.1.1 Definition

12.4.3.1.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.1.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.1.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II (in case of UE operation mode A).

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
> USIM removal possible without powering down   Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure with identity P-TMSI. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. A routing area updating procedure is performed at T3312 timeout.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 11.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
5	->		ATTACH COMPLETE	
6	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
7		SS		The SS verifies that the time between the attach and the periodic RA updating is T3312
8	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-3 signature Routing area identity = RAI-1
9	UE			The UE is switched off or power is removed (see ICS).
10	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
11				The SS is set in network operation mode II.
12	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 10.

Specific message contents

None.

12.4.3.1.5   Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step6, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.2 Periodic routing area updating / accepted / T3312 default value

12.4.3.2.1 Definition

12.4.3.2.2 Conformance requirement

The User Equipment shall perform a periodic routing area update procedure after a T3312 timeout.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.2.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.2.4 Method of test

Initial condition

System Simulator:

   One cell operating in network operation mode I.

User Equipment:

   The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

Related ICS/IXIT statements

   Support of PS service Yes/No
   UE operation mode A Yes/No
   Switch off on button Yes/No
   Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The UE initiates a combined PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312 is omitted. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. After 54 minutes, a periodic routing area updating procedure is initiated by the UE.

T3312; default value 54 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
3	<-		ATTACH ACCEPT	Attach result = 'Combined PS /IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 T3312 = 54 min
4	->		ATTACH COMPLETE	
5	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE not present.
6		SS		The SS verifies that the time between the attach request and the periodic RA updating is T3312
7	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI and TMSI not included. Update result = 'RAupdated' P-TMSI-3 signature Routing area identity = RAI-1
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'

Specific message contents

None.

12.4.3.2.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step5, when the timer T3312 is expired, UE shall:

- initiate the routing area updating procedure with Update type = 'Periodic updating'.

12.4.3.3 Periodic routing area updating / no cell available / network mode I

12.4.3.3.1 Definition

12.4.3.3.2 Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode I, then the UE shall perform a combined routing area update procedure indicating 'combined RA/LA updating with IMSI attach'.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.1.

12.4.3.3.3 Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.3.4 Method of test

Initial condition

System Simulator:

> Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> Cell A is operating in network operation mode II and cell B is in network operation mode I.

User Equipment:

> The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

> Idle updated on Cell A

Related ICS/IXIT statements

> Support of PS service Yes/No
> UE operation mode A Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a routing area updating procedure is performed immediately.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable neighbour cell". (see note)
2		SS		The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
6	->		ATTACH COMPLETE	
7		SS		After 5 minutes, the signal strength is lowered until the UE has lost contact with the SS. Set the cell type of cell A to the "non-suitable cell".(see note)
8		SS		Wait 2 minutes.
9		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)
10	UE			Cell B is preferred by the UE.
11	UE			The UE immediately starts a combined RA updating procedure
12	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA/LA updating with IMSI attach' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available or IE is omitted.
13	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-3 P-TMSI-3 signature Mobile identity = TMSI-2 Routing area identity = RAI-4
14	->		ROUTING AREA UPDATE COMPLETE	
15	UE			The UE is switched off or power is removed (see ICS).
16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:			The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

12.4.3.3.5 Test requirements

At step4, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step12, when the UE is both IMSI attached for PS and non-PS service , and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell that supports PS and the network is in network oration mode I, UE shall:

- perform the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach".

12.4.3.4   Periodic routing area updating / no cell available

12.4.3.4.1   Definition

12.4.3.4.2   Conformance requirement

If the UE is both IMSI attached for PS and non-PS services, and if the UE lost coverage of the registered PLMN and timer T3312 expires; if the UE returns to coverage in a cell that supports PS and the network is in network operation mode II, then the UE shall perform a periodic routing area update procedure and a periodic location update procedure.

Reference

3GPP TS 24.008 clauses 4.7.2.2 and 4.7.5.2.

12.4.3.4.3   Test purpose

To test the behaviour of the UE with respect to the periodic routing area updating procedure.

12.4.3.4.4   Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature and RAI-1.

Idle updated on Cell A

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The UE initiates a PS attach procedure. The SS reallocates the P-TMSI and returns ATTACH ACCEPT message with a new P-TMSI and timer T3312. The UE acknowledge the new P-TMSI by sending ATTACH COMPLETE message. PS radio contact is distorted before T3312 timeout. PS radio contact is established again (after T3312 timeout), and a periodic routing area updating procedure ~~and a periodic location update procedure~~ is performed immediately(no periodic location update procedure is performed as T3212=infinity).

T3312; set to 6 minutes.

Expected Sequence

Step	Direction UE	SS	Message	Comments
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
2	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
3	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3312 = 6 minutes
4	->		ATTACH COMPLETE	
5-12			(void)	
13		SS		After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
14		SS		After 2 minutes, the signal strength is increased until the UE have got contact with the SS.
15	UE			The UE immediately start the periodic RA updating procedure
16	->		ROUTING AREA UPDATE REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
17	<-		ROUTING AREA UPDATE ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RAupdated' P-TMSI-3 signature Routing area identity = RAI-1
18	UE			The UE is switched off or power is removed (see ICS).
19	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

RRC System information block type 1

Information element	Comment Value
T3212 (Periodical Location updating)	Infinity

12.4.3.4.5   Test requirements

At step2, when the UE is powered up or switched on, UE shall:

- initiate the combined PS attach procedure with the information elements specified in the above Expected Sequence.

At step16, when the UE is both IMSI attached for PS and non-PS service, and if the UE lost coverage of the reiterated PLMN and the timer T3312 expires, if the UE returns to coverage in a cell in the same RA that supports PS and that indicates that the network is in network operation mode II, UE shall:

- perform the periodic routing area updating procedure indicating "Periodic updating".

12.5 P-TMSI reallocation

12.5.1 Definition

12.5.2 Conformance requirement

1) A User Equipment shall acknowledge a new P-TMSI when explicitly allocated.

2) The P-TMSI shall be updated on the USIM when the User Equipment is correctly deactivated in accordance with the manufacturer's instructions.

3) A User Equipment shall use the given P-TMSI in further communication with the network.

Reference

3GPP TS 24.008 clause 4.7.6.

12.5.3 Test purpose

To verify that the UE is able to receive and acknowledge a new P-TMSI by means of an explicit P-TMSI reallocation procedure.

To verify that the UE has stored the P-TMSI in a non-volatile memory.

The implicit reallocation procedure is tested in the attach procedure.

12.5.4 Method of test

Initial condition

System Simulator:

   One cell operating in network operation mode II.

User Equipment:

   The UE has a valid IMSI.

Related ICS/IXIT statements

   Support of PS service Yes/No
   UE operation mode A Yes/No
   UE operation mode C Yes/No (only if mode A not supported)
   Switch off on button Yes/No
   Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

An explicit P-TMSI reallocation procedure is performed (P-TMSI reallocation command sent from the SS and acknowledged from the UE by P-TMSI reallocation complete). The UE is PS detached and switched off. Its power supply is interrupted for 10 seconds. The power supply is resumed and then the UE is switched on. A PS attach procedure is performed with the given P-TMSI as identity.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS). If UE operation mode A not supported set the UE in operation mode C.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	<-		P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
7	->		P-TMSI REALLOCATION COMPLETE	
8	UE			The UE is switched off or power is removed (see ICS).
9	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
10	UE			Ensure the power is removed from the UE for at least 10 seconds
11	UE			The UE is powered up or switched on and initiates an attach (see ICS).
12	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
13	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-3 signature Routing area identity = RAI-1
14	<-		PAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for PS services.
15	->		RRC CONNECTION REQUEST	
16	<-		RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
18	->		SERVICE REQUEST	service type = "paging response"
19	<-		RRC CONNECTION RELEASE	
20	->		RRC CONNECTION RELEASE COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.5.5 Test requirements

At step3, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step7, when the UE receives P-TMSI REALLOCATION COMMAND message from SS, UE shall:

- acknowledge the new P-TMSI by sending P-TMSI REALLOCATION COMPLETE message.

At step12, when the UE is powered up or switched on, UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence.

At step18, when the UE receives the paging message for PS domain with Mobile identity = P-TMSI-2, UE shall:

- respond to the paging message for PS domain by sending the SERVICE REQUEST message.

12.6 PS authentication 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).
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
7		SS		The SS checks the RES value.
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	
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)
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
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. Detach type = 'power switched off, PS detach'
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 step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step6, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message form SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message with the RES information field set to the same value as the one produced by the authentication and ciphering algorithm in the network.

At step11, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.2 Authentication rejected by the network

12.6.1.2.1 Definition

12.6.1.2.2 Conformance requirement

Upon receipt of an AUTHENTICATION AND CIPHERING REJECT message, the UE shall set the PS update status to GU3 ROAMING NOT ALLOWED and shall delete the P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number stored.

The USIM shall be considered as invalid until switching off or the USIM is removed.

If the AUTHENTICATION AND CIPHERING REJECT message is received, the UE shall abort any GMM procedure, shall stop the timers T3310 and T3330 (if running) and shall enter state GMM-DEREGISTERED.

Reference

3GPP TS 24.008 clauses 4.7.7.5.

12.6.1.2.3 Test purpose

To test the behaviour of the UE if the network rejects the authentication and ciphering procedure.

12.6.1.2.4 Method of test

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> Both cells are operating in network operation mode II.

User Equipment:

> The UE has a valid IMSI.

Related ICS/IXIT statements

> Support of PS service Yes/No
> UE operation mode A Yes/No
> UE operation mode C Yes/No
> Switch off on button Yes/No
> Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The test sequence is repeated for K = 1, 2.

A complete PS attach procedure is performed. The SS rejects the following authentication and ciphering procedure. The UE is paged with its former P-TMSI and shall not respond.
The Cell is changed into a new Routing Area.

The SS checks that the UE does not perform normal routing area updating.

The SS then checks that the UE does not perform a PS detach.

The SS checks that the UE does not perform a PS Attach procedure.

Expected Sequence

The test sequence is repeated for k = 1, 2

For k =1, the UE is set in UE operation mode C. If MS operation mode C not supported then k = 2.

For k = 2 the UE is set in UE operation mode A.

Step	Direction		Message	Comments
	UE	SS		
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 powered up or switched on and initiates an attach (see ICS).
2a	UE		Registration on CS	See TS 34.108 This is applied only for UE in UE operation mode A.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Set PS-CKSN-1
7	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
8	<-		AUTHENTICATION AND CIPHERING REJECT	
9	<-		PAGING TYPE1	Mobile identity = IMSI Paging order is for PS services.
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11		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)
12	UE			Cell B is preferred by the MS.
13	UE			No ROUTING AREA UPDATE REQUEST sent to the SS (SS waits 30 seconds).
14	UE			If possible (see ICS) the UE initiates an attach by MMI or by AT command.
15	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
16	UE			The UE is switched off (see ICS).
17		SS		No DETACH REQUEST sent to the SS (SS waits 30 seconds).
18				The UE is powered up or switched on and initiates an attach (see ICS). Step 19 is only performed for k =2
19	UE		Registration on CS	Parameter mobile identity is IMSI. See TS 34.108
20	->		ATTACH REQUEST	Attach type = 'PS only attached' Mobile identity = IMSI
21	<-		ATTACH ACCEPT	Attach result = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4~~2~~
22	->		ATTACH COMPLETE	
23	UE			The UE is switched off or power is removed. (see ICS)
24	->		DETACH REQUEST	Message not sent if power is removed.
25	UE			If k=1 then the test is repeated for k=2.
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.

12.6.1.2.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REJECT message, UE shall:

- not respond paging message for PS domain.

At step13, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- not perform normal routing area updating.

At step17, when the UE is switched off, UE shall:

- not perform PS detach procedure.

12.6.1.3 Authentication rejected by the UE

12.6.1.3.1 GMM cause 'MAC failure'

12.6.1.3.1.1 Definition

12.6.1.3.1.2 Conformance requirement

If the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'MAC failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.1.3 Test purpose

To test the behaviors of the UE, when the UE considers the MAC code (supplied by the core network in the AUTN parameter) to be invalid.

12.6.1.3.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
Both cells are operating in network operation mode II.

The MAC (Message Authentication Code) code, which is included in AUTHENTICATION AND CIPHERING REQUEST, is invalid value.

User Equipment:

The UE has a valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No
UE operation mode C   Yes/No
Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'MAC failure' to the SS and starts timer T3214.

The SS initiates an identification procedure, upon receipt of a failure message with reject cause 'MAC failure'.

After the identification procedure is complete, the SS re-initiates an authentication and ciphering procedure.

T3360; set to 6 seconds.

T3318; set to 5 seconds.

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 is not supported, goto step 25.
3	UE			
4				The following messages are sent and shall be received on cell A.
5	UE			The UE is powered up or switched on and initiates an attach (see ICS).
6	->		ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
7	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Invalid Message Authentication Code (MAC).
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
10	<-		IDENTITY REQUEST	Identity type = IMSI
11	->		IDENTITY RESPONSE	Mobile identity = IMSI
		SS		
13	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CSKN-1
14	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
15	SS			The SS checks the RES value.
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
18	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)
19	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
20	SS			The value of PS-CKSN is checked
21	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
22	->		ROUTING AREA UPDATE COMPLETE	
23	UE			The UE is switched off or power is removed (see ICS).
24	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, PS detach'
25	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 24.
NOTE:				The definitions for "~~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.

12.6.1.3.1.5 Test requirements

At step6, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step9, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST with Invalid Message Authentication Code, UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS

At step11, when the UE receives the IDENTITY REQUEST message with Identity type = IMSI from SS, UE shall:

- send the IDENTITY RESPONSE message with Mobile identity = IMSI to SS.

At step14, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message (containing a valid MAC) from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS

12.6.1.3.2 GMM cause 'Synch failure'

12.6.1.3.2.1 Definition

12.6.1.3.2.2 Conformance requirement

If the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range, the UE shall send AUTHENTICATION AND CIPHERING FAILURE message with the reject cause 'Synch failure' to the System Simulator.

Reference

3GPP TS 24.008 clause 4.7.7.

12.6.1.3.2.3 Test purpose

To test the behaviors of the UE, when the UE considers the SQN (supplied by the core network in the AUTN parameter) to be out of range.

12.6.1.3.2.4 Method of test

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4).
> Both cells are operating in network operation mode II.

User Equipment:

> The UE has a valid IMSI.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> UE operation mode C   Yes/No

Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

A PS attach is performed, and the SS initiates an authentication and ciphering procedure.

UE sends AUTHENTICATION AND CIPHERING FAILURE message with reject cause 'synch failure' to the SS and starts timer T3214.

SS re-initiates an authentication and ciphering procedure.

T3360; set to 6 seconds.

T3320; set to 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		The following messages are sent and shall be received on cell A. 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 is not supported, goto step 21. The following messages are sent and shall be received on cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS).
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. SQN is out of range.
6		SS		The SS starts the timer T3360
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause = 'Synch failure' AUTS parameter
8		SS		set new authentication vectors. (re-synchronisation)
9	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Including PS-CKSN-1
10	->		AUTHENTICATION AND CIPHERING RESPONSE	RES
11		SS		The SS checks the RES value.
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
13	->		ATTACH COMPLETE	
14		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)
15	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 PS-CKSN-1
16		SS		The value of PS-CKSN is checked
17	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2

Step	Direction		Message	Comments
	UE	SS		
18	->		ROUTING AREA UPDATE COMPLETE	
19	UE			The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message is not sent if power is removed. Detach type = 'power switched off, PS detach'
21	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 20.
NOTE:	The definitions for "~~Off cell~~Non-Suitable cell" and "Serving cell" are specified in TS34.108 clause6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.6.1.3.2.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information element specified in the above Expected Sequence.

At step7, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message(SQN is out of range.), UE shall:

- send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS

At step10, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- send the AUTHENTICATION AND CIPHERING RESPONSE message to SS.

At step15, when the RF level of the attached cell is lower than the RF level of the new cell, UE shall:

- perform routing area updating procedure.

12.6.1.3.3 Authentication rejected by the UE / fraudulent network

12.6.1.3.3.1 Definition

12.6.1.3.3.2 Conformance requirement

It can be assumed that the source of the authentication challenge is not genuine (authentication not accepted by the UE) if any of the following occur:

- After sending the AUTHENTICATION & CIPHERING FAILURE message with GMM cause 'MAC failure' the timer T3318 expires;

- Upon receipt of the second AUTHENTICATION & CIPHERING REQUEST message from the network while the T3318 is running and the MAC value cannot be resolved.

If the UE deems that the network has failed in the authentication check, then the UE shall treat the cell where the AUTHENTICATION & CIPERHERING REQUEST message was received as barred, until System Information is refreshed.

Reference

3GPP TS 24.008 clause 4.7.7.6.1.

12.6.1.3.3.3 Test purpose

To test UE treating a cell as barred:

1. when the network sends the second AUTHENTICATION & CIPHERING REQUEST message with invalid MAC code during the timer T3318 is running.

2. when the timer T3318 has expired.

12.6.1.3.3.4 Method of test

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1(RAI-1), cell B in
> MCC1/MNC1/LAC1/RAC2(RAI-2).
> Both cells are operating in network operation mode II.

User Equipment:

> The UE has a valid IMSI.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> UE operation mode C   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

Two cells are configured. Cell A transmits with higher power so that the UE attempts an attach procedure to cell A.

During the attach procedure, the SS initiates an authentication and ciphering procedure but it sends an incorrect Message Authentication Code (MAC) value in its AUTHENTICATION AND CIPHERING REQUEST message.

The UE sends AUTHENTICATION AND CIPHERING FAILURE message to the SS indicating authentication failure.

The SS repeats a second time the authentication procedure, which fails again. Next, the UE shall attempt to attach to cell B, which again fails. In this case T3318 expires after the second attempt.

The UE shall treat now both cells as barred and shall not attempt to access the network, even if the user triggers the UE to perform an attach procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note) The following messages are sent and shall be received on cell A.
2	UE			The UE is powered up or switched on and initiates an attach procedure.
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
4	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
5	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
6	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
7	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
8	SS			SS verifies that the UE does not attempt to access the network for 30s.
9	SS			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)
				UE shall attempt an attach on cell B. The following messages are sent and shall be received on cell B.
10	UE			The UE initiates an attach by MMI or AT command.
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobility identity = IMSI
12	<-		AUTHENTICATION AND CIPHERING REQUEST	Request for authentication. Invalid Message Authentication Code (MAC).
13	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
14	SS			SS waits T3318 (20s)
15	SS			SS verifies that the UE does not attempt to access the network for 30s.
16	UE			The UE initiates an attach by MMI or AT command.
17	SS			SS verifies that the UE does not attempt to access the network for 30s.
NOTE:	The definitions for "~~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.

12.6.1.3.3.5   Test requirements

At step3, when the UE is powered on or switched on, UE shall:

-    initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step5, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), UE shall:

-    send the AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step7, when the UE receives the second AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC) from the network during a timer T3318 is running, UE shall:

- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step11, when the activated cell is changed from cell A to cell B, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step13, when the UE receives the AUTHENTICATION AND CIPHERING REQUEST message with invalid Message Authentication Code (MAC), UE shall:

- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'MAC failure' to the SS.

At step17, when the timer T3318 is expired, UE shall:

- not attempt to access the network.

12.6.2   Void

12.7   Identification procedure

The purpose of this procedure is to check that the UE gives its identity as requested by the network. If this procedure does not work, it will not be possible for the network to rely on the identity claimed by the UE.

12.7.1   General Identification

12.7.1.1   Definition

12.7.1.2   Conformance requirement

1) When requested by the network the User Equipment shall send its IMSI.

2) When requested by the network the User Equipment shall send its IMEI as stored in the Mobile Equipment.

3) When requested by the network the User Equipment shall send its IMEISV as stored in the Mobile Equipment.

Reference

3GPP TS 24.008 clauses 4.7.8

12.7.1.3   Test purpose

To verify that the UE sends identity information as requested by the system. The following identities can be requested: IMSI, IMEI and IMEISV.

12.7.1.4   Method of test

Initial condition

System Simulator:

One cell operating in network mode II.

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 (see ICS). If UE operation mode C not supported, goto step 14.
2		UE		The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
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
12		UE		The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
14		UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 13.

Specific message contents

None.

12.7.1.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, when the SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

At step9, when the SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

At step11, when the SS requests an IMEISV with the IDENTITY REQUEST message, UE shall:

-   send the IDENTITY RESPONSE message with the Mobile identity = IMEISV.

12.8 GMM READY timer handling

The READY timer is not applicable for UMTS.

12.8.1 Definition

12.8.2 Conformance requirement

If a READY timer value is received by an UE capable of both UMTS and GSM in the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, then the received value shall be stored by the UE in order to be used at an intersystem change from UMTS to GSM.

Reference

3GPP TS 24.008 clause 4.7.2.1

12.8.3 Test purpose

To verify the functionality of the READY timer.

12.8.4 Method of test

12.8.4.1 Test procedure1

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC1 (RAI-1).
> Both cells are operating in network operation mode II.

User Equipment:

> The UE has a valid IMSI.

Related ICS/IXIT statements

> Support of PS service   Yes/No
> UE operation mode A   Yes/No
> Switch off on button   Yes/No
> Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

An attach is performed.

T3314; set to 60 seconds

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 A (see ICS). If UE operation mode A not supported set the UE in operation mode C. The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 T3314 = 60 seconds
5	->		ATTACH COMPLETE	
6		UE		The UE is switched off or power is removed (see ICS).
7	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
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.

12.8.5 Test requirements

At step4, when the UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

12.9 Service Request procedure (UMTS Only)

12.9.1 Service Request Initiated by UE Procedure

12.9.1.1 Definition

12.9.1.2 Conformance requirement

UE shall send the Service Request message to the network in order to establish the PS signalling connection for the upper layer signalling or for the resource reservation for active PDP context(s).

Reference

TS 24.008 clauses 4.7.13

TS 23.060 clauses 6.12.1

12.9.1.3 Test purpose

To test the behaviour of the UE if the UE initiates the CM layer service (e.g. SM or SMS) procedure.

12.9.1.4   Method of test

Initial condition

System Simulator:

    One cell operating in network operation mode II.

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(see ICS). If UE operation mode C not supported, goto step 12.
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling",
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
~~9a~~		~~SS~~		~~The SS initiates a security mode control procedure.~~
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'
12	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 11.

Specific message contents

None.

12.9.1.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, 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

a) The UE is in PMM-IDLE state. The SS pages the UE by sending a Paging message to the UE.

b) The UE sends a SERVICE REQUEST message to the SS. Service Type specifies Paging Response. The Service Request is carried over the radio in an RRC Direct Transfer message.

c) After the SS receives the SERVICE REQUEST message from the UE, SS initiates an authentication procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C(see ICS). If UE operation mode C not supported, goto step 12.
2	UE			The UE is powered up or switched in and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
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	
6	<-		PAGING TYPE1	
7	->		SERVICE REQUEST	Service type = "Paging response"
8	<-		AUTHENTICATION AND CIPHERING REQUEST	
9	->		AUTHENTICATION AND CIPHERING RESPONSE	
~~9a~~		~~SS~~		~~The SS initiates a security mode control procedure.~~
10	UE			The UE is switched off or power is removed (see ICS).
11	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
12	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 11.

Specific message contents

None.

12.9.2.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At 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".

12.9.3 Service Request / rejected / Illegal MS

12.9.3.1 Definition

12.9.3.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Illegal MS", the UE shall:

1) set the GPRS update status to GU3 ROAMING NOT ALLOWED and enter state GMM DEREGISTRATED.

2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

3) consider the USIM as invalid for PS service until switched off or the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.3.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Illegal MS".

12.9.3.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

The UE has a valid P-TMSI-1, P-TMSI-1 signature, RAI-1 and IMSI.

Related ICS/IXIT statements

Support of PS service Yes/No

UE operation mode A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #3(Illegal MS).

c) After the UE receives the SERVICE REJECT message with the cause value #3(Illegal MS), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the power of the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "Illegal MS"
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
15	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
17	->		ATTACH COMPLETE	
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "Illegal MS"
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22		SS		The SS verifies that the UE does not attempt to access the network. (SS waits 30 seconds)
23	UE			USIM is removed.
24	UE			USIM is inserted.
25	UE			The UE initiates a PS attach, by MMI or by AT command.
26	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
27	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
28	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		AUTHENTICATION AND CIPHERING REQUEST	
32	->		AUTHENTICATION AND CIPHERING RESPONSE	
33	SS			The SS initiate a security mode control procedure.
34	SS			After the security mode control procedure is completed, the SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.3.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "Illegal MS" UE shall:

- not attempt to access the network.

At step26, when the USIM is replaced, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.4 Service Request / rejected / PS services not allowed

12.9.41 Definition

12.9.4.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PS services not allowed", the UE shall:

1) set the GPRS update state to GU3 ROAMING NOT ALLOWED.

2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

3) consider the USIM as invalid for PS service until the UE is switched off or until the USIM is removed.

Reference

TS 24.008 clauses 4.7.13.4

12.9.4.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PS service not allowed".

12.9.4.4 Method of test

Initial condition

System Simulator:

> One cell operating in network operation mode II.

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 A Yes/No
> UE operation mode C Yes/No
>
> Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #7(PS services not allowed).

c) After the UE receives the SERVICE REJECT message with the cause value #7(PS services not allowed), the UE deletes any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

d) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

e) The SS checks that the UE does not initiate an upper-layer signalling until the USIM is removed from the UE.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PS services not allowed"
10	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
11		SS		The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
12	UE			The UE is switched off.
13			Void	
14	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
15	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
16	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
17	->		ATTACH COMPLETE	
18	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
19	->		SERVICE REQUEST	Service type = "signalling"
20	<-		SERVICE REJECT	Reject cause = "PS services not allowed"
21	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
22		SS		The SS verifies that the UE does not attempt to access the network. (SS wait 30seconds)
23	UE			USIM is removed.
24	UE			USIM is inserted.
25	UE			The UE initiates a PS attach, by MMI or by AT command.
26	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
27	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3
28	->		ATTACH COMPLETE	

Step	Direction		Message	Comments
	UE	**SS**		
29	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
30	->		SERVICE REQUEST	Service type = "signalling"
31	<-		AUTHENTICATION AND CIPHERING REQUEST	
32	->		AUTHENTICATION AND CIPHERING RESPONSE	
33	SS			The SS initiate a security mode control procedure.
34	SS			After the security mode control procedure is completed, the SS releases RRC connection.
35	UE			The UE is switched off or power is removed (see ICS).
36	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

12.9.4.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "PS services not allowed" UE shall:

- not attempt to access the network.

At step15, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step22, when the UE receives the SERVICE REJECT message with cause "PS services not allowed" UE shall:

- not attempt to access the network.

At step26, when the USIM is replaced, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step30, UE shall:

- initiate the service request procedure.

12.9.5 Service Request / rejected / MS identity cannot be derived by the network

12.9.5.1 Definition

12.9.5.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "MS identity cannot be derived by the network", the UE shall:

1) set the GPRS update states to GU2 NOT UPDATED.

2) delete any P-TMSI, P-TMSI signature, RAI and GPRS ciphering key sequence number.

3) initiate the PS attach procedure automatically.

Reference

TS 24.008 clauses 4.7.13.4

12.9.5.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "MS identity cannot be derived by the network".

12.9.5.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

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 A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #9 (MS identity cannot be derived by the network).

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "MS identity cannot be derived by the network"
10	UE			The UE automatically initiates the PS attach procedure.
11	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
12	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature
13	->		ATTACH COMPLETE	
14	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
15	->		SERVICE REQUEST	Service type = "signalling"
16	<-		AUTHENTICATION AND CIPHERING REQUEST	
17	->		AUTHENTICATION AND CIPHERING RESPONSE	
18	SS			The SS initiate a security mode control procedure.
19	SS			After the security mode control procedure is completed, the SS releases RRC connection.
20	UE			The UE is switched off or power is removed (see ICS).
21	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.5.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives the SERVICE REJECT message with cause "MS identity cannot be derived by the network" UE shall:

- initiate PS attach procedure automatically.

12.9.6 Service Request / rejected / PLMN not allowed

12.9.6.1 Definition

12.9.6.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "PLMN not allowed", the UE shall:

1) delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.

2) set the GPRS update status to GU3 ROAMING NOT ALLOWED.

3) store the LAI or the PLMN identity in the appropriate forbidden list.

Reference

TS 24.008 clauses 4.7.13.4

12.9.6.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "PLMN not allowed".

12.9.6.4 Method of test

Initial condition

System Simulator:

> Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1 cell B in
> MCC2/MNC1/LAC1/RAC1.
> All two cells are 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 A Yes/No
> UE operation mode C Yes/No

> Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #11 (PLMN not allowed).

c) The SS checks that the UE does not initiate an upper-layer signalling until the UE is switched off.

d) The SS checks that the UE does not answer a Page from the SS until the power of the UE is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "~~Off cell~~Non-Suitable cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "PLMN not allowed"
10	UE			The UE stores the LAI or the PLMN identity in the "forbidden PLMN list".
11	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
12	SS			The SS verifies that the UE does not attempt to access the network. (SS wait 30second)
13	<-		PAGING TYPE1	Paging order is for PS service
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	SS			The following messages shall be sent and shall be received on cell B. Set the cell type of cell A to the "~~Off cell~~Non-Suitable cell". Set the cell type of cell B to the "Serving cell". (see note)
16	UE			Cell B is preferred by the UE.
17	UE			The UE initiates an attach automatically, by MMI or by AT command.
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'PS only attached'
20	->		ATTACH COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	
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.

12.9.6.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE receives the SERVICE REJECT message with cause "PLMN not allowed", UE shall:

- not perform a PS attach procedure in the same PLMN.

At step13, when the UE receives the paging message for PS domain UE shall:

- not respond to the paging message for PS domain.

At step18, UE shall:

- perform PS attach procedure.

12.9.7a Service Request / rejected / No PDP context activated

12.9.7a.1 Definition

12.9.7a.2 Conformance requirement

If the network rejects a service request procedure with the cause "No PDP context activated", the UE shall:

- deactivate all active PDP contexts.

After the UE deactivates all active PDP contexts, UE shall:

- perform PDP context(s) activation.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7a.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No PDP context activated".

12.9.7a.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

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 A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) After the SS receiving the SERVICE REQUEST message, the SS sends a SERVICE REJECT message with the cause value #40 (No PDP context activated).

c) After the UE receives the SERVICE REJECT message, the UE shall send the ACTIVATE PDP CONTEXT REQUEST message.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
1				The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2				The SS is set in network operation mode II and activates cell A.
3				The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	
5	<-		ATTACH ACCEPT	
6	->		ATTACH COMPLETE	
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		AUTHENTICATION AND CIPHERING REQUEST	
10	->		AUTHENTICATION AND CIPHERING RESPONSE	
11		SS		The SS initiates a security mode control procedure.
12	UE			After a PS call is established, the UE suspends transmission of the user data.
13		SS		The SS initiates a Radio Bearer release procedure.
14	UE			The UE resumes the transmission of the user data.
15	->		SERVICE REQUEST	Service type = "data"
~~9~~16	<-		SERVICE REJECT	Reject cause = "No PDP context activated"
17~~10~~	UE			The UE shall deactivate locally all active PDP contexts.
18~~11~~	UE			The UE initiates a PS call, by MMI or by AT command.
19~~11a~~	->		SERVICE REQUEST	Service type = "signalling"
20	<-		AUTHENTICATION AND CIPHERING REQUEST	
21	->		AUTHENTICATION AND CIPHERING RESPONSE	
21~~11b~~		SS		SS initiates a security procedure by sending SECURITY MODE COMMAND message.
~~12~~	~~->~~		~~ACTIVATE PDP CONTEXT REQUEST~~	~~Request a PDP context activation~~
~~13~~	~~<-~~		~~ACTIVATE PDP CONTEXT ACCEPT~~	~~Accept the PDP context activation~~
~~14~~	~~UE~~			~~The UE initiates Deactivate PDP Context request, by MMI or by AT command.~~
~~15~~	~~->~~		~~DEACTIVE PDP CONTEXT REQUEST~~	~~Deactivate PDP context deactivation~~
~~16~~	~~<-~~		~~DEACTIVE PDP CONTEXT ACCEPT~~	~~Accept PDP context deactivation~~
22~~17~~	UE			The UE is switched off or power is removed (see ICS).
23~~18~~	UE			The UE initiates Detach request, by MMI or by AT command.
24~~19~~	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.7a.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure.

When the UE receives a SERVICE REJECT message with the cause "No PDP context activated", UE shall:

- deactivate all active PDP context.

At step15~~11a~~, UE shall:

- initiates a Service request procedure by sending a SERVICE REJECT message with Service type = "data".

~~At step12, UE shall:~~

~~- perform PDP context(s) activation.~~

12.9.7b Service Request / rejected / No Suitable Cells In Location Area

12.9.7b.1 Definition

12.9.7b.2 Conformance requirement

If the network rejects a service request procedure from the UE with the cause "No Suitable Cells In Location Area", the UE shall:

1) ~~delete any RAI, P-TMSI, P-TMSI signature and GPRS ciphering key sequence number.~~

~~2)~~ set the GPRS update status to GU3 ROAMING NOT ALLOWED.

~~3)~~2) store the LAI or the PLMN identity in the list of 'forbidden location areas for roaming'.

~~4)~~3) search for a suitable cell in a different location area on the same PLMN.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7b.3 Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "No Suitable Cells In Location Area".

12.9.7b.4 Method of test

Initial condition

System Simulator:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC2/RAC1 (RAI-3), cell C in MCC2/MNC1/LAC1/RAC1 (RAI-2)

All three cells are operating in network operation mode II.

User Equipment:

The UE has valid IMSI.

Related ICS/IXIT statements

Support of PS service   Yes/No
UE operation mode A   Yes/No

Switch off on button   Yes/No
Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a Service request with the cause value 'No Suitable Cells In Location Area'. The SS checks that the UE shall perform PS attach procedure when the UE enters a suitable cell in a different location area on the same PLMN.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". Set the cell type of cell C to the "Suitable neighbour cell". (see note) The SS configures power level of each Cell as follows. Cell A > Cell B = Cell C
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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	
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "No Suitable Cells In Location Area" The following message are sent and shall be received on cell B.
10	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1IMSI
11	<-		ATTACH ACCEPT	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Attach result = 'PS only attached'
12	->		ATTACH COMPLETE	
13	UE			The UE is switched off or power is removed (see ICS).
14	->		DETACH REQUEST	
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.7b.5   Test requirements

At step3, when the UE is powered on or switched on, UE shall:

-    initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step10, when the UE enters a suitable cell in a different location area on the same PLMN, UE shall:

- perform the PS attach procedure.

12.9.7c   Service Request / rejected / Roaming not allowed in this location area

12.9.7c.1   Definition

12.9.7c.2   Conformance requirement

If the network rejects a service request procedure from the UE with the cause "Roaming not allowed in this location area", the UE shall:

  1) set the PS update status to GU3 ROAMING NOT ALLOWED

  2) store the LAI in the list of "forbidden location areas for roaming".

  3) perform a PLMN selection.

Reference

TS 24.008 clauses 4.7.13.4

12.9.7c.3   Test purpose

To test the behaviour of the UE if the network rejects the service request procedure with the cause "Roaming area not allowed in this location area".

12.9.7c.4   Method of test

Initial condition

System Simulator:

  Three cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4), cell C in MCC2/MNC1/LAC2/RAC1 (RAI-6)

  All three cells are operating in network operation mode I.

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 A   Yes/No
  Switch off on button   Yes/No
  Automatic PS attach procedure at switch on or power on   Yes/No

Test procedure

The SS rejects a Service request with the cause value 'Roaming not allowed in this location area'. The SS checks that the UE shall not perform PS attach procedure when the UE enters a different location area.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
		SS		The following messages are sent and shall be received on cell A.
1		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Non-Suitable cell". Set the cell type of cell C to the "Non-Suitable cell". (see note)
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' Routing area identity = RAI-1
6		SS		The SS initiates the RRC connection release.
7	UE			The UE initiates a PS call, by MMI or by AT command.
8	->		SERVICE REQUEST	Service type = "signalling"
9	<-		SERVICE REJECT	Reject cause = "roaming not allowed in this location area"
10	UE			The UE performs PLMN selection.
11		SS		Set the cell type of cell A to the " Non-Suitable cell". Set the cell type of cell B to the " Serving cell". (see note)
12	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
13		SS		Set the cell type of cell B to the " Non-Suitable cell". Set the cell type of cell C to the " Serving cell". (see note) The following messages are sent and shall be received on cell C.
14	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' or "PS Attach while IMSI attached" Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
15	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Mobile identity = TMSI-2 Routing area identity = RAI-6
16	->		ATTACH COMPLETE	
17	UE			The UE is switched off or power is removed (see ICS).
18	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
NOTE:				The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".

Specific message contents

None.

12.9.7c.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

At step12, when the UE enters a same location area, UE shall:

- not initiate the combined PS attach procedure.

At step12, when the UE enters a different location area, UE shall:

- initiate the combined PS attach procedure with information elements specified in the above Expected Sequence.

12.9.8 Service Request / Abnormal cases / Access barred due to access class control

12.9.8.1 Definition

12.9.8.2 Conformance requirement

If the UE access class X is barred, the UE shall:

1) not start Service Request procedure.

2) stay in the current serving cell.

3) applie normal cell reselection process.

If the UE access class X is granted or serving cell is changed, the UE shall:

1) start Service Request procedure.

Reference

TS 24.008 clauses 4.7.13.5.

12.9.8.3 Test purpose

To test the behavior of the UE in case of access class control (access is granted).

12.9.8.4 Method of test

Initial condition

A random access class X (0-15) is selected. The USIM is programmed with this access class X.

Initially, an access class X is barred.

System Simulator:

One cell operating in network operation mode II.

Access class x barred.

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 SS initiates access class X barred. A service request procedure is not performed.

The SS initiates that access class X is not barred. A service request procedure is performed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The USIM is set up Access class x. The access class x is barred in cell A. The UE is powered up or switched on and attempt to initiate an ATTACH.
2	UE			No SERVICE REQUEST sent to SS, as access class X is barred. (SS waits 30 seconds)
3		SS		The access class x is not barred anymore.
4	UE			The UE automatically initiates an attach.
5	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
7	->		ATTACH COMPLETE	
8	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
9	->		SERVICE REQUEST	Service Type = "signalling".
10	<-		AUTHENTICATION AND CIPHERING REQUEST	
11	->		AUTHENTICATION AND CIPHERING RESPONSE	
11a		SS		The SS initiates a security mode control procedure.
12	UE			The UE is switched off or power is removed (see ICS).
13	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.8.5   Test requirements

At step2, when the UE access class x is barred, UE shall:

-   not perform Service Request procedure.

At step5, when the UE access class x is barred, UE shall:

-   initiate the PS attach procedure.

At step9, UE shall:

- perform Service Request procedure.

12.9.9 Service Request / Abnormal cases / Routing area update procedure is triggered

12.9.9.1 Definition

12.9.9.2 Conformance requirement

If a cell change into a new routing area occurs and the necessity of routing area update procedure is determined before the security mode control procedure is completed, the UE shall:

- abort Service request procedure.

- start routing area update procedure immediately.

Reference

TS 24.008 clause 4.7.13.5

12.9.9.3 Test purpose

To test the behavior of the UE in case of collision between Routing area update procedure and Service request procedure.

12.9.9.4 Method of test

Initial condition

System Simulator:

> Two cells, cell A in MCC1/MNC1/LAC1/RAC1 (RAI-1), cell B in MCC1/MNC1/LAC1/RAC2 (RAI-4). Both cells are operating in network operation mode II.

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 A Yes/No
> UE operation mode C Yes/No
>
> Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) The UE initiates the routing area update procedure.

c) The UE aborts Service request procedure and performs Routing area updating procedure.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2		SS		The SS is set in network operation mode II. Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "Suitable neighbour cell". (see note)
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
		UE		The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8		SS		Activate cell B with a lower signal strength than cell A The RF level of cell A is lowered until cell B is preferred by the UE.
9	UE			The UE aborts Service request procedure.
				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) The following message are sent and shall be received on cell B.
10	->		ROUTING AREA UPDATE REQUEST	Update type = 'RA updating' P-TMSI-2 signature
11	<-		ROUTING AREA UPDATE ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
12	->		ROUTING AREA UPDATE COMPLETE	
13	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
14	->		SERVICE REQUEST	Service type = "signalling"
15	<-		AUTHENTICATION AND CIPHERING REQUEST	
16	->		AUTHENTICATION AND CIPHERING RESPONSE	
17		SS		The SS initiate a security mode control procedure.
18		SS		After the security mode control procedure is completed, the SS releases RRC connection.
19		UE		The UE is switched off or power is removed (see ICS).
20	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'
NOTE:	The definitions for "Suitable neighbour cell" and "Serving cell" are specified in TS34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".			

Specific message contents

None.

12.9.9.5 Test requirements

At step3, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence .

At step7, UE shall:

- perform the service request procedure.

At step10, when the routing area update procedure is initiated before the security mode control procedure is completed, UE shall;

- abort a Service request procedure

- perform the routing area updating procedure.

At step14, after the UE completes the routing area updating procedure, UE shall;

- restart the Service Request procedure.

12.9.10 Service Request / Abnormal cases / Power off

12.9.10.1 Definition

12.9.10.2 Conformance requirement

When the UE in GMM-SERVICE-REQUEST-INITIATED state is switched off, UE shall:

- perform PS detach procedure.

Reference

TS 24.008 clauses 4.7.13.5

12.9.10.3 Test purpose

To test the behavior of the UE in case of collision between Service request procedure and "powered off".

12.9.10.4 Method of test

Initial condition

System Simulator:

One cell operating in network operation mode II.

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 A Yes/No
UE operation mode C Yes/No

Switch off on button Yes/No

Test procedure

The UE is switched off after initiating a Service request procedure. A PS detach is automatically performed by the UE before power is switched off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The following message are sent and shall be received on cell A. The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5	<-		ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
7	->		SERVICE REQUEST	Service type = "signalling"
8	UE			The UE is powered off and initiates a PS detach (with power off) by MMI or by AT command.
9	->		DETACH REQUEST	Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.10.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step7, UE shall:

- perform the service request procedure

At step9, when the UE is switched off during the Service Request procedure, UE shall;

- abort the Service request procedure.

  - perform the PS detach procedure.

12.9.11 Service Request / Abnormal cases / Service request procedure collision

12.9.11.1 Definition

12.9.11.2 Conformance requirement

When the UE in GMM-SERVICE-REQUEST-INITIATED state receives a DETACH REQUEST message from the network, UE shall:

- perform the PS detach procedure.

- abort Service request procedure.

Reference

TS 24.008 clauses 4.7.13.5

12.9.11.3 Test purpose

To test the behaviour of the UE in case of collision between Service request procedure and PS detach procedure.

12.9.11.4 Method of test

Initial condition

System Simulator:

> One cell operating in network operation mode II.

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 A Yes/No
> UE operation mode C Yes/No
>
> Switch off on button Yes/No

Test procedure

a) The UE sends a SERVICE REQUEST message to the SS in order to establish the PS signalling connection for the upper layer signalling.

b) The SS sends a DETACH REQUEST message to the UE, before the security procedure is not started.

c) After the UE receives the DETACH REQUEST message, the UE aborts the Service request procedure.

Expected Sequence

Step	Direction UE	Direction SS	Message	Comments
				The following message are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C (see ICS).
2	SS			The SS is set in network operation mode II and activates cell A.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
5		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
6			Void	
7	UE			The UE initiates an upper-layer signalling, e.g., Active PDP Context request, by MMI or by AT command.
8		->	SERVICE REQUEST	Service type = "signalling"
9	SS			The SS does not respond to SERVICE REQUEST message.
10		<-	DETACH REQUEST	GMM cause = "reattach request"
11		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
12		<-	ATTACH ACCEPT	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Routing area identity = RAI-1 Attach result = 'PS only attached'
13		->	ATTACH COMPLETE	
14	UE			The UE is switched off or power is removed (see ICS).
15		->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.9.11.5 Test requirements

At step4, when the UE is powered on or switched on, UE shall:

- initiate the PS attach procedure with information elements specified in the above Expected Sequence.

At step11, when the UE receives a DETACH REQUEST message from the network before the Service request procedure completes, UE shall;

- abort the Service request procedure.

- perform the PS detach procedure.

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

T1-020304

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21ˢᵗ – 23ʳᵈ May 2002

T1S-020240r2

CR-Form-v6.1

CHANGE REQUEST

⌘	**TS 34.123-1**	**CR**	**179**	⌘**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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Corrections to clause 8.3 of TS 34.123-1	
Source: ⌘	MCI, Siemens AG	
Work item code: ⌘	TEI	***Date:*** ⌘
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: ⌘	1. Merge corrections that were approved in T1/SIG #22 meeting into this document.
	2. A periodical measurement report for intra-frequency measurement is currently used for testing of CELL_UPDATE procedure with "cell update cause" of "uplink data transmission" in URA_PCH and CELL_PCH state. Since periodical reporting of intra-frequency measurements is not available in these states, it is proposed to use periodical reporting of traffic volume measurements, which are available also in CELL_PCH and URA_PCH state, if measurement validity is set to "all states".
	3. When UTRAN receives CELL UPDATE message that includes IE "AM_RLC error indication (RB2, RB3 or RB4)" set to 'TRUE', the UTRAN should send RRC CONNECTION RELEASE message to UE instead of CELL UPDATE CONFIRM message to request the UE to re-establish the RBs.

Summary of change: ⌘	**New corrections**
	1. In clause 8.3.1.5 and 8.3.1.6
	• Test Procedure:
	SS sends a MEASUREMENT CONTROL message to trigger UE to measure the <u>traffic volume on RACH</u> or <u>CPCH</u><s>CPICH RSCP</s> in a <s>intra frequecny</s><u>traffic volume</u> measurement <u>with</u>

<u>measurement validity set to "all-states</u>

- MEASUREMENT CONTROL (Step 2)
  Specific Message Contents are included.

2. In clause 8.3.1.15
   - The title of the test case is revised.
   - Conformance requirement and test purpose are updated.
   - In the test procedure, step 6 to 9 are removed. New step 6 is added to request the SS to transmit RRC CONNECTION RELEASE message to UE on the downlink CCCH. New step 7 is added to use the generic procedure to check that the UE is in idle mode state.

Revision 2 corrections:

Conformance requirements are revised to remove ambiguous declaration of references in the statements.

In clause 8.3.4.4 and 8.3.4.5, in ACTIVE SET UPDATE message content, the following changes are made:

IE "DPCH frame offset" is set to "Calculated value from Cell synchronisation information".

IE "Spreading factor" is set to "Reference TS 34.108 clause 6.10 Parameter set".

Approved corrections in T1/SIG #22 meeting (highlighted in yellow)

<u>From T1S-020135r1 – Correction to clause 8.3 of TS 34.123-1 (MCI)</u>

Corrections of spelling errors.

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 8.3.1.2, 8.3.1.3, 8.3.1.4, 8.3.1.5, 8.3.1.6, 8.3.1.13, 8.3.1.18, 8.3.1.20, 8.3.1.23, 8.3.4.2 and 8.3.4.3.

In IE "Radio link addition information", missing IEs are added. Clause 8.3.4.1, 8.3.4.2, 8.3.4.3, 8.3.4.4 and 8.3.4.5 are affected.

In the test purpose of clause 8.3.1.17, RRC CONNECTION RELEASE message is revised to be received on the CCCH.

In the test procedure of clause 8.3.1.10, it is revised such that the UE shall not send any CELL UPDATE message the uplink DCCH but uplink CCCH.
In clause 8.3.1.18, IE "RRC State indicator" is added to CELL UPDATE message in step 8 and set to "CELL_DCH".

In the test procedure of clause 8.3.1.14, it is changed in the last step, the SS send CELL UPDATE CONFIRM message instead of CELL UPDATE message.
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.

From T1S-020140 – Correction to section 8.3.1.15 (ASUSTek)

1. Change "reset" to "re-establish".

2. Change (MAX_RST+1) to (MAX_RST-1).

3. Change IE "AM_RLC error indicator (RB2 or RB3)" and "RLC re-establish indicator (RB2 and RB3)" to IE "AM_RLC error indication (RB2, RB3 or RB4)" and "RLC re-establish indicator (RB2, RB3 and RB4)" respectively.

From T1S-020141 – Correction to the setting of IE "UTRAN DRX cycle length coefficient" (ASUSTek)

1. 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".

From T1S-020142r1 – Correction to section 8.3.1.18 (ASUSTek)

1. Change the Specific Message Contents of CELL UPDATE (Step 7) from "Check to see if set to value assigned in cell 2" to "Check to see if set to value assigned in cell 1".

2. IE "RB timer indicator" is added to the Specific Message Contents of CELL UPDATE (Step 7) to check if the IE "T314 expired" is set to "FALSE" and the IE "T315 expired" is set to "TRUE".

From T1S-020143r1 – Miscellaneous corrections to section 8.3 (ASUSTek)

In section 8.3.1.12:
1. Change (N302+1) to (N302).
2. Add test steps to verify that the UE indeed entered the idle mode.

In section 8.3.2.3:
1. Changed the IE "URA Update Cause" from "re-entered service area" to "periodical URA update".

In section 8.3.2.4:
1. Add test steps to verify that the UE indeed entered the idle mode.

In section 8.3.2.5:
1. Remove the text "SS waits for T302 to expire" from Comment of step 4.

In section 8.3.2.6:
1. Remove the text "SS waits for T302 to expire" from Comment of step 3.
2. Add test steps to verify that the UE indeed entered the idle mode.

| **Consequences if not approved:** | ⌘ | The test prose cannot test UE correctly. |

| **Clauses affected:** | ⌘ | |

| **Other specs** | ⌘ | ☐ Other core specifications | ⌘ | |

affected:	☐	Test specifications		
	☐	O&M Specifications		
Other comments:	⌘	Affects R'99 and R'4 UE test cases.		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

8.3.1.2 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~~ this message with a matched identity.
7	→		CELL UPDATE	The UE is in CELL_FACH state
8		←	CELL UPDATE CONFIRM	
9	→		UTRAN MOBILITY INFORMATION 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
UTRAN DRX cycle length coefficient	3

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_FACH
New C-RNTI	'1010 1010 1010 1010'

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".

After step 8, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC.

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	dBm/ 3.84 MHz	-60	-75	-75	-60

Table 8.3.1.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE starts from CELL_PCH state. When the UE detects the expiry of periodic cell updating timer T305 according to the system information, the UE moves to CELL_FACH state. It shall transmit a CELL UPDATE message on the uplink CCCH and set the value "periodical cell update" into IE "Cell update cause". SS answers with a CELL UPDATE CONFIRM message. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "infinity", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH". 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. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. Next, SS transmits UTRAN MOBILITY INFORMATION message, which includes IE "T305" set to "5", to UE. UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.1.4, causing the UE to enter CELL_FACH state in cell 2 and transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Then SS shall transmit CELL UPDATE CONFIRM with IE "RRC state indicator" set to "CELL_PCH". 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	
3a	→		UTRAN MOBILITY INFORMATION CONFIRM	
4	←		UTRAN MOBILITY INFORMATION	IE "T305" is set to 'infintiy'.
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	
12a	→		UTRAN MOBILITY INFORMATION CONFIRM	
13		←	UTRAN MOBILITY INFORMATION	IE "T305" is set to '5'.
14	→		UTRAN MOBILITY INFORMATION CONFIRM	
15				SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.3.1.4.
16	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "cell reselection".
17		←	CELL UPDATE CONFIRM	UE enters CELL_PCH state after 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 3 and 12)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

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 DRX cycle length coefficient	3

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

After step 4, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 6, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 8 and before step 10, the UE shall not transmit any CELL UPDATE messages.

After step 10, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 13, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 15, the UE shall transmit a CELL UPDATE message with IE "cell update cause" set to "cell reselection" on the uplink CCCH.

After step 18 the UE shall transmit a CELL UPDATE message stating the cell update cause to be periodic updating.

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 traffic volume on RACHorCPCHCPICH RSCP in a intra frequecnytraffic volume measurement with measurement validity set to "all-states" 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. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit 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~~See message content.
7a	→		UTRAN MOBILITY INFORMATION CONFIRM	
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	Unacknowledged mode RLC
- Measurement Reporting/Event Trigger Reporting Mode	Periodical
CHOICE Measurement Type	Traffic volume measurement
- Traffic volume measurement objects	1
- Uplink transport channel type	RACHorCPCH
- Traffic volume measurement quantity	
- Measurement quality	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	FALSE
- Variance of RLC Buffer Payload for each RB	FALSE
- Measurement validity	All states
- CHOICE reporting criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64000

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
UTRAN DRX cycle length coefficient	3
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, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

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

After step 7a, 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 traffic volume on RACHorCPCH~~CPICH RSCP~~ in a traffic volume~~intra frequency~~ measurement with measurement validity set to "all-states" 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. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. The UE shall stay in CELL_FACH state and transmit 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~~See message content .
7a	→		UTRAN MOBILITY INFORMATION CONFIRM	
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	Unacknowledged mode RLC
- Measurement Reporting/Event Trigger Reporting Mode	Periodical
CHOICE Measurement Type	Traffic volume measurement
- Traffic volume measurement objects	1
- Uplink transport channel type	RACHorCPCH
- Traffic volume measurement quantity	
- Measurement quality	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	FALSE
- Variance of RLC Buffer Payload for each RB	FALSE
- Measurement validity	All states
- CHOICE reporting criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64000

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
UTRAN DRX cycle length coefficient	3
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, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

.

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

After step 7a, 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	dBm/3.84MHz	-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	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 're-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
UTRAN DRX cycle length coefficient	3

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	dBm/3.84MHz	-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~~CCCH, 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	Only 1 entry
Paging record	
CHOICE Used paging identity	CN identity
- Paging cause	Terminating Call with one of the supported services
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same IMSI value stored in the TEST USIM card.

8.3.1.10.5 Test requirement

After step 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.
6	←		PAGING TYPE 1	SS pages the UE at its assigned paging occasion using the allocated UE identity.
7	→		RRC CONNECTION REQUEST	The UE shall respond to this page as it has already entered the idle mode.

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 - 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 '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.

After step 3 and if K is greater than N302, the UE shall stop transmitting CELL UPDATE message and then enters idle state.

After step 6 the UE shall transmit a RRC CONNECTION REQUEST message to respond to the PAGING TYPE 1 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 messageon 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. 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	←		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.~~See message content.
6	→		UTRAN MOBILITY INFORMATION 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)

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	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 '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	UTRAN identity
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

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".

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

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 CONFIRM 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
  - 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 '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
  - S-RNTI
Cell Update Cause
Failure 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 'Paging Response'
	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 SRB

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.~~

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

> …

> 1> RLC unrecoverable error:

>> …

>> 2> if the UE detects RLC unrecoverable error in an AM RLC entity:

>>> 3> perform cell update using the cause "RLC unrecoverable error".

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

> …

> 1> if an unrecoverable error in any of the AM RLC entities for the signalling radio bearers RB2, RB3 or RB4 is detected:

>> 2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to TRUE.

> 1> otherwise:

>> 2> set the IE "AM_RLC error indication (RB2, RB3 or RB4)" to FALSE.

> …

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

> …

> 1> initiate an RRC connection release procedure by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:

>> 2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:

>>> 3> initiate an RRC connection release procedure by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

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.~~

- To confirm that UE enters idle mode state after receiving RRC CONNECTION RELEASE message on the downlink CCCH.

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 or RB4)" 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.~~ SS sends RRC CONNECTION RELEASE message on the downlink CCCH to UE. SS waits for [TBD] s and then calls for generic procedure C.1 to check that UE is in idle mode state.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
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 or RB4)" shall be set to 'TRUE'
6	←		~~CELL UPDATE CONFIRM~~ RRC CONNECTION RELEASE	~~IE "RLC re-establish indicator (RB2 and RB3)" set to TRUE.~~ Sends this message on the downlink CCCH and includes UE's UTRAN identity.
7	←→		~~UE CAPABILITY ENQUIRY~~ CALL C.1	If the test result of C.1 indicates that UE is in idle mode state, the test passes, otherwise it fails.
8	→		~~UE CAPABILITY INFORMATION~~Void	~~This message shall be transmitted using AM RLC for RRC signalling on the uplink DCCH.~~
9	←		~~UE CAPABILITY INFORMATION CONFIRM~~Void	

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 or RB4)	Check to see if set to 'TRUE'
Cell update cause	RLC unrecoverable error

~~CELL UPDATE CONFIRM~~RRC CONNECTION RELEASE (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 or RB4 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~~CCCH.

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.

Test Procedure

Table 8.3.1.18

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	OFF	-75	-60

Table 8.3.1.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. 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 MOBILITYBINFORMATION 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. 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 UE	SS	Message	Comment
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	See message content.
12	→		UTRAN MOBILITY INFORMATION 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	Check to see if set to value assigned in cell 21.
- S-RNTI	Check to see if set to value assigned in cell 21.
Cell Update Cause	Check to see if set to 'radio link failure'
RB timer indicator	
- T314 expired	FALSE
- T315 expired	TRUE

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC State indicator	CELL_DCH
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'

CELL UPDATE CONFIRM (Step 12)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

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".

After step 12, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

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. . 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		←	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	
6	→		UTRAN MOBILITY INFORMATION 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	UTRAN identity
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'1010 1010 1010 1010'

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".

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

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 8.3.1.12-1.

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	dBm	-73	-79	-79	Cell 2 is switched off	-73	-79	Cell 3 is switched off	Cell 3 is switched off	-73

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 8.3.2.1-1, 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 8.3.1.22-1

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	dBm	-73	-79	Cell 2 is switched off	-73

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 Conection 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 Conection 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 inTable 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_-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 (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
- S$_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1$_s$	10 (gives actual value of 20 dB)
- Qhyst2$_s$	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 11 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.1.~~21~~23-1

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	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

* 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 "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 8.3.1.21-1. 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. 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 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. 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 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	→		UTRAN MOBILITY INFORMATION CONFIRM	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	→		UTRAN MOBILITY INFORMATION CONFIRM	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 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 11 (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	
- $Qoffset1_{s,n}$	-20dB
- $Qoffset2s,n$	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
- $Qoffset2s,n$	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 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
- Qoffset2s,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
- Qoffset2s,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 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

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
New C-RNTI	'1010 1010 1010 1010'

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 transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC. 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 transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC. 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 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
- $S_{limit,SearchRAT}$	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 11 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.1.~~21~~24-1

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	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

* 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
- $S_{search,RAT}$	-32 dB
- $S_{HCS,RAT}$	Not Present
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1$_s$	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 (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
- $S_{search,RAT}$	-32 dB
- $S_{HCS,RAT}$	Not Present
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1$_s$	10 (gives actual value of 20 dB)
- Qhyst2$_s$	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 11 (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	
- $Qoffset1_{s,n}$	-20dB
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

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
UTRAN DRX cycle length coefficient	3

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".

8.3.2   URA Update

8.3.2.1   URA Update: Change of URA

8.3.2.1.1   Definition

8.3.2.1.2   Conformance requirement

This procedure is to update UTRAN with the current URA of the UE after a change of URA has occurred in URA_PCH state. It may also be used for supervision of the RRC connection, even if no change of URA takes place.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.1.3   Test purpose

To confirm that the UE executes an URA update procedure after the successful change of URA. To confirm UE responds correctly when it re-selects to a new cell while waiting for URA UPDATE CONFIRM message from SS.

8.3.2.1.4   Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 and 2 are active with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.2.1, while cell 3 is active with URA-ID 2.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 from the list of URA-ID in cell 1.

Test Procedure

Table 8.3.2.1

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/3.84MHz	-60	-75	-75	-75	-60	-75	-75	-75	-60

The test begins with the downlink power transmission of all cells set according to 'T0' column in table 8.3.2.1. The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. The SS then adjusts the transmission power again according to 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 2. Since same URA identity is broadcasted in cell 1 and 2, the UE shall not perform any URA update procedure due to the change of URA. Next SS adjusts the transmission power according to 'T2' column. UE shall perform a cell reselection to cell 3 and when the UE finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message, which includes the IEs "RRC State Indicator" and IE "URA-ID" to the UE on the downlink DCCH. The IE "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 3 without sending any uplink response message. Next SS adjusts the transmission power according to 'T1' column. UE shall re-select to cell 2 and transmit a URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T0' column. UE shall perform cell re-selection to cell 1 and then sent a URA UPDATE message to SS. Finally SS shall transmit URA UPDATE CONFIRM message to UE.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.1.
3				UE shall perform a cell reselection but shall not transmit URA UPDATE message with the update cause of "change of URA".
4				SS set the power transmission of all cells according to column 'T2' of table 8.3.2.1.
5	→		URA UPDATE	The UE shall perform a cell reselection first and when it finds that its current URA-ID 1 is not in the newly broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6	←		URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set "URA_PCH", and also IE "URA Identity" equals to "URA-ID 2".
7				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.1.
8	→		URA UPDATE	
9				SS do not respond to the URA UPDATE message from UE and set the power transmission of all cells according to column 'T0' of table 8.3.2.1.
10	→		URA UPDATE	
11	←		URA UPDATE CONFIRM	

Specific Message Contents

URA UPDATE (Step 5, 8 and 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 '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 2

URA UPDATE CONFIRM (Step 11)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.1.5 Test requirement

After step 2 the UE shall not transmit a URA UPDATE message.

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

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

After step 9 the UE shall find the new cell and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

8.3.2.2 URA Update: Periodical URA update and Reception of Invalid message

8.3.2.2.1 Definition

8.3.2.2.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE when the UE detects that it is still within the service area after the expiry of periodic URA updating timer T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.2.3 Test purpose

To confirm that the UE executes a URA update procedure after the expiry of timer T305. To verify that the UE handles an invalid URA UPDATE CONFIRM message correctly when executing the URA update procedure.

8.3.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305, set according to the value specified in system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". SS replies with an invalid URA UPDATE CONFIRM message sent on downlink CCCH, and check to see if the UE handles this event properly. The UE shall attempt to retransmit the identical URA UPDATE message. After the SS receives the

second URA UPDATE message, it transmits a correct URA UPDATE CONFIRM message, which includes the IE "new U-RNTI", to the UE on the downlink DCCH. Then the UE shall then transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH. The UE returns to CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3		←	URA UPDATE CONFIRM	See specific message content.
4	→		URA UPDATE	UE shall not return to idle mode immediately, but attempts to re-transmit this message.
5		←	URA UPDATE CONFIRM	Including IE "new U-RNTI"
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA 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'
RRC Transaction identifier	Check to see if set to the value given in URA UPDATE CONFIRM message in step 3.
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

URA UPDATE CONFIRM (Step 3)

Information Element	Value/remark
All IEs	Not Present

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
SRNC Identity	'0000 0000 0001'
S-RNTI	'0000 0000 0000 0000 1111'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type IE of this message is checked.

8.3.2.2.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, and transmit a URA UPDATE message which sets the value "periodical cell update" into IE "URA update cause".

After step 3 the UE shall re-transmit URA UPDATE message with IE "Protocol error indicator" set to 'TRUE' and IE "Protocol error information" set to "ASN.1 violation and encoding error".

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and returns to the CELL_FACH state.

8.3.2.3 URA Update: re-entering of service area after T305 expiry

8.3.2.3.1 Definition

8.3.2.3.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE if the UE detects that it is out of service area after the expiry of timer T305, and then subsequently re-enters the service area before the expiry of T307.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.3.3 Test purpose

To confirm that the UE executes a URA update procedure when the UE re-enters the service area before the expiry of timer T307, after being out of service area at the expiry of timer T305.

8.3.2.3.4 Method of test

Initial Condition

System Simulator: 1 cell with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.2.3.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 in the list of URA-ID.

Test Procedure

Table 8.3.2.3

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-80

Table 8.3.2.3 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is initially in URA_PCH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.3 so that S<0. When the UE detects the expiry of timer T305 according to the system information, the UE finds that it is out of service area. The UE is expected to search for cell to camp. Then SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 so that S>0. The UE shall detect that it returns to normal service before T307 expires. The UE shall move to CELL_FACH state and starts transmitting a URA UPDATE message which contains the value " periodical URA update ~~re-entered service area~~" in IE "URA update cause" to the SS on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "new C-RNTI", and "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts operating from URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.3 such that the cell 1 is no longer suitable for camping i.e. S<0.
3				The UE shall attempt to perform a URA update upon the expiry of timer T305. It shall discover that it is out of service and starts searching for cell to camp.(T307 timer starts)
4				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 before T307 expires.
5	→		URA UPDATE	Value "periodical URA update ~~re-entered service area~~" shall be set in IE "URA update cause"
6	←		URA UPDATE CONFIRM	The message includes IEs "new C-RNTI" , and "new U-RNTI"

| 7 | → | UTRAN MOBILITY INFORMATION 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

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	2
BCCH modification time	Not present

URA UPDATE (Step 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'
URA Update Cause	Check to see if set to "periodical URA update" re-entered service area'

URA 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	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 1111 1111'
New C-RNTI	Arbitrary 16-bit string which is different the assigned C-RNTI in RRC CONNECTION SETUP message.

8.3.2.3.5 Test requirement

After step 2 the UE shall detect that it is out of service area and shall not send a URA UPDATE on the uplink CCCH channel.

After step 4 the UE shall transmit a URA UPDATE message which sets value "==periodical URA update== ~~re-entered service area~~" into IE "URA update cause".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.4 URA Update: loss of service after expiry of timers T307 and T305

8.3.2.4.1 Definition

8.3.2.4.2 Conformance requirement

This procedure is required to handle the case when the UE fails to update UTRAN with the current URA of after expiry of timers T307 and T305 consecutively. The UE shall move to idle mode subsequently.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.4.3 Test purpose

To confirm that the UE moves to idle mode after the expiry of timer T307, following an expiry of timer T305 when it discovers that it is out of service area.

8.3.2.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.2.4

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-80

Table 8.3.2.4 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in URA_PCH 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 8.3.2.3 so that S<0. When the UE detects the expiry of periodic URA updating timer T305 according to the system information, the UE detects that it is out of service area. After the expiry of timer T307, the UE moves to the idle state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 so that S>0. SS verifies that UE is in idle mode state by sending a PAGING TYPE 1 message to the UE using UE identity. UE shall respond ==with a RRC CONNECTION REQUEST message==~~to this message~~.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				Initially, the UE is in the URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that the UE detects that it is out of service area.
3				Upon the expiry of timer T305, the UE shall search for cell to camp and triggers T307 timer. SS listens to the uplink CCCH to verify that URA UPDATE message is not transmitted.
4				After the expiry of timer T307, the UE enters idle state.
5	←		PAGING TYPE 1	SS pages the UE at its assigned paging occasion using the allocated UE identity.
6	→		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

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	2
BCCH modification time	Not present

8.3.2.4.5 Test requirement

After step 2 the UE shall not transmit any URA UPDATE message on the uplink CCCH.

After step 5, the UE shall transmit a RRC CONNECTION REQUEST message to respond to the PAGING TYPE 1 message~~enter idle mode state~~.

8.3.2.5 URA Update: Success after Confirmation error of URA-ID list

8.3.2.5.1 Definition

8.3.2.5.2 Conformance requirement

UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA of the UE. UTRAN shall respond to the URA UPDATE message by sending a URA UPDATE CONFIRM message. When the indicated URA-ID in the received URA UPDATE CONFIRM message is not found in the list of URA-IDs that is broadcasted in system information block type 2, the UE transmits a URA UPDATE message repeatedly until its internal counter V302 is greater than N302.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.5.3 Test purpose

To confirm that the UE retries to perform the URA update procedure following a confirmation error of URA-ID list.

8.3.2.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

At the start of this test, the UE is brought to URA_PCH state and assigned a URA with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The reason for performing URA updating shall be set to "periodic URA update" in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and IE "URA identity" set to "URA-ID 2" to the UE on the downlink DCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted in system information block type 2, and then the UE shall retry to transmit a URA UPDATE message for a confirmation error of URA-ID list. SS continue to send the same URA UPDATE CONFIRM message until N302+1 URA UPDATE messages have been received. Then SS transmits a URA UPDATE CONFIRM message to the UE which includes IE "URA Identity" set to "URA-ID 1" and IE "new U-RNTI". The UE shall find this URA-ID in its URA-ID list and transmits an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is URA_PCH state. SS initializes counter K to 0
2	→		URA UPDATE	This message shall contain value "periodic URA update" set in IE "URA update cause" after expiry of timer T305.
3				SS increments K by 1. If K is not greater than N302, proceed to step 4. If K is greater than N302, SS proceeds to step 5.
4	←		URA UPDATE CONFIRM	SS transmits this message, setting the value "URA-ID 2" to IE "URA Identity". ~~SS waits for T302 to expire a~~And then returns to step 2.
5	←		URA UPDATE CONFIRM	SS transmits this message, setting IE "URA Identity" to "URA-ID 1". This message also comprises IE "New U-RNTI".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA UPDATE CONFIRM (Step 4)

Use the same message sub-type as specified in Annex A, with the following exceptions:

Information Element	Value/remark
URA Identity	2

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type as specified in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
-SRNC Identity	'0000 0000 0001'
-S-RNTI	'0000 0000 0000 0101 0101'
URA Identity	1

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type IE in this message is checked.

8.3.2.5.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "URA update cause".

After step 4 the UE shall re-transmit a URA UPDATE message after it detects a confirmation error of URA-ID list for the URA-ID indicated in the URA UPDATE CONFIRM message. A total of (N302+1) URA UPDATE messages shall be received by the SS.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.6 URA Update: Failure (V302 is greater than N302: Confirmation error of URA-ID list)

8.3.2.6.1 Definition

8.3.2.6.2 Conformance requirement

UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA of the UE. When the indicated URA-ID in the received URA UPDATE CONFIRM message is not in the list of URA-IDs that is broadcasted in system information block type 2, the UE transmits URA UPDATE messages repeatedly until its internal counter V302 is greater than N302. If V302 is greater than N302 then the UE enters idle state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.6.3 Test purpose

To confirm that the UE make repeated attempts to perform the URA update procedure following a detection of a confirmation error of URA-ID list. It then moves to idle state when internal counter V302 is greater than N302.

8.3.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is originally in URA_PCH state updated with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE shall move to CELL_FACH state and transmit a URA UPDATE message to the SS on the uplink CCCH. In this message, the value "periodic URA update" shall be set in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and indicating the IE "URA Identity" to be "URA-ID 2" to the UE on the downlink DCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted. Then the UE shall retry to transmit a URA UPDATE message for N302 times and each time the SS responds with the URA UPDATE CONFIRM message similar to the previous one. After that, the UE shall enter 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 URA_PCH state at the start of the test. SS sets internal counter K to 0.
2	→		URA UPDATE	The message shall indicate "periodic URA update" in IE "URA update cause". This message is sent following the expiry of timer T305. SS increments counter K by 1.
3	←		URA UPDATE CONFIRM	The SS transmit this message and set IE "URA Identity" to "URA-ID 2". When K is greater than N302 proceeds to step 4, else ~~SS waits for T302 to expire and~~ executes step 2.
4			Void	The UE shall enter idle state.
5	←		PAGING TYPE 1	SS pages the UE at its assigned paging occasion using the allocated UE identity.
6	→		RRC CONNECTION REQUEST	The UE shall respond to this page as it has already entered the idle mode.

Specific Message Contents

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type defined in Annex A, with the following exceptions:

Information Element	Value/remark
URA Identity	2

8.3.2.6.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" in IE "URA update cause".

After step 3 and if K is not greater than N302, the UE shall retry to transmit a URA UPDATE message after it detects the confirmation error of URA-ID list for the URA-ID included in the URA UPDATE CONFIRM message.

After step 3 and if K is greater than N302, the UE shall stop transmitting URA UPDATE message and then enters idle state.

After step 5 the UE shall transmit a RRC CONNECTION REQUEST message to respond to the PAGING TYPE 1 message.

8.3.2.7 URA Update: Success after T302 timeout

8.3.2.7.1 Definition

8.3.2.7.2 Conformance requirement

The UE transmits an URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA identity stored the UE. When the UE fails to receive any URA UPDATE CONFIRM message after T302 timer expires, it transmits a URA UPDATE message repeatedly at an interval of T302 timer value until its internal counter V302 is greater than N302.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.7.3 Test purpose

To confirm that the UE attempts to repeat the URA update procedure upon the expiry of timer T302.

8.3.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause". The SS ignores this message. The UE shall then retry to transmit a URA UPDATE message after the expiry of timer T302. SS transmits a URA UPDATE CONFIRM message to the UE to end the procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the beginning of test. SS waits for T305 to expire.
2	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T305.
3				SS shall not reply.
4	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T302.
5	←		URA UPDATE CONFIRM	

Specific Message Contents

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type as in Annex A.

8.3.2.7.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH. The updating cause shall be set to "periodic URA update" in IE "URA update cause".

After step 3 the UE shall retry to transmit a URA UPDATE message at the expiry of timer T302.

8.3.2.8 Void

8.3.2.9 URA Update: Failure (UTRAN initiate an RRC connection release procedure on CCCH)

8.3.2.9.1 Definition

8.3.2.9.2 Conformance requirement

The UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with information on the current URA of the UE. If the UE receives a RRC CONNECTION RELEASE message on downlink CCCH, it shall enter idle state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.9.3 Test purpose

To confirm that the UE moves to idle state upon the reception of RRC CONNECTION RELEASE message on downlink CCCH during a URA update procedure.

8.3.2.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of periodic URA updating timer T305, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". The SS transmits 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		RRC CONNECTION RELEASE	SS transmits RRC CONNECTION RELEASE message to the UE on the downlink CCCH.
4				The UE releases L2 signalling radio bearer and radio resources then the UE goes to idle mode.

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

RRC CONNECTION RELEASE (Step 3)

Use the same message sub-type found in Annex A

8.3.2.9.5 Test requirement

After step 1 the UE shall transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "Cell update cause".

After step 3 the UE shall enter idle state.

8.3.2.10 URA Update: Reception of URA UPDATE CONFIRM message that causes invalid configuration

8.3.2.10.1 Definition

8.3.2.10.2 Conformance Requirement

If the UE encounters a URA UPDATE CONFIRM message that set the variable INVALID_CONFIGURATION to TRUE while executing a URA update procedure, it shall check the current value of its internal counter V302. If V302 is not greater than N302, the UE shall re-transmits URA UPDATE message on uplink CCCH, restart T302 timer and increments V302. On the other hand, if V302 is greater than N302, the UE shall abandon cell update procedure and enters idle mode.

8.3.2.10.3 Test Purpose

To confirm that the UE retransmits a URA UPDATE message when it receives a URA UPDATE CONFIRM message that will trigger an invalid configuration in the UE, if the number of retransmissions has not reached the maximum allowed value.

8.3.2.10.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. This message shall contain value "periodical URA update" in IE "URA update cause". Upon receiving such a message, the SS replies with a URA UPDATE CONFIRM message with IE "RRC State Indicator" set to "CELL_DCH". The UE shall detect its variable "invalid configuration" is set and re-transmit URA UPDATE message. SS then transmit a valid URA UPDATE CONFIRM UPDATE message to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		URA UPDATE CONFIRM	
4	→		URA UPDATE	IE "Protocol error indicator" is set to TRUE and IE "Protocol error information" is set to "Information element value not comprehended".
5			Void	
6			Void	
7	←		URA UPDATE CONFIRM	

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	Information element value not comprehended

URA 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

8.3.2.10.5 Test Requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause".

After step 3 the UE shall transmit a URA UPDATE message on the uplink CCCH, setting value 'TRUE" in IE "URA update cause" and value "Information element value not comprehended" in "Protocol error cause".

8.3.2.11 URA Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

8.3.2.11.1 Definition

8.3.2.11.2 Conformance requirement

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

   - URA reselection:

     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

     - if the list of URA identities in system information block type 2 is empty; or

     - if the system information block type 2 can not be found:

       - perform URA update using the cause "change of URA".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred, see clause 5.3.4.1.

   - 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.

8.3.2.11.3 Test purpose

1. To confirm that the UE executes a URA update procedure after a successful reselection of another UTRA cell with a URA identity that is not the URA of the UE and with a PLMN identity different from the original cell but with a PLMN 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 requirements 1, 2 and 3.

2. To confirm that the UE refrains from executing a URA 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: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

8.3.2.11.4 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 8.3.2.1-1, while cell 2 and cell 3 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3. The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.11-1

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		
URA identity		URA-ID 1			URA-ID 2			URA-ID 3		
CPICH RSCP	dBm	-73	-79	-79	Cell 2 is switched off	-73	-79	Cell 3 is switched off	Cell 3 is switched off	-73

Table 8.3.2.11-1 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 URA UPDATE message

   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	→		URA UPDATE	At T1: Sent in Cell 2 The value "change of URA" set in IE "URA update cause".
3		←	URA UPDATE CONFIRM	
4	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

FFS

8.3.2.11.5   Test requirement

The UE shall send a URA UPATE message after T1 and refrain from sending a URA update (or any other message) after T2.

8.3.2.12   Restricted cell reselection to a cell belonging to forbidden LA list (URA_PCH)

8.3.2.12.1   Definition

8.3.2.12.2   Conformance requirement

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

   - URA reselection:

     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

     - if the list of URA identities in system information block type 2 is empty; or

     - if the system information block type 2 can not be found:

       - perform URA update using the cause "change of URA".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred, see clause 5.3.4.1.

   - 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.

8.3.2.12.3   Test purpose

To confirm that the UE refrains from selects a UTRA cell and performs a URA update if that cell has a LA identity that is part of the list of LAs stored in the UE as "forbidden location areas for roaming".

   NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

8.3.2.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.1-1, while cell 2 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored LA-ID 2 into the list of "forbidden location areas for roaming". The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.12-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
URA identity		URA-ID 1		URA-ID 2	
LA identity		LA-ID 1		LA-ID 2	
CPICH RSCP	dBm	-73	-79	Cell 2 is switched off	-73

Table 8.3.2.12-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

a) At T1, verify that the UE does not reselect to cell 2 and not send a URA update in cell 2, although cell 2 is the best cell.

Expected sequence

-

Specific Message Contents

-

8.3.2.12.5 Test requirement

The UE shall not send a URA UPDATE (or any other message) in Cell 2 after T1.

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

8.3.2.13.1 Definition

8.3.2.13.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE after a change of URA has occurred in URA_PCH state with HCS parameter applied. It may also be used for supervision of the RRC connection, even if no change of URA takes place.

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.

8.3.2.13.3 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 an URA update procedure after the successful change of URA due to HCS Cell Reselection. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

8.3.2.13.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.11-1. Cell2 with URA-ID 1 andCell 3 with URA-ID 2 are switched off

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, with URA-ID 1 from the list of URA-ID in cell 1

Specific Message Content

For system information blocks 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 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
- $S_{intrasearch}$	16 dB
- $S_{intersearch}$	16 dB
- $S_{searchHCS}$	53 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- $S_{search,RAT}$	-32 dB
- $S_{HCS,RAT}$	Not Present
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- $Qhyst1_s$	10 (gives actual value of 20 dB)
- $Qhyst2_s$	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 11 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
CPICH RSCP	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

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

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

Expected sequence

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

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 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 11 (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$_{s,n}$	-20dB
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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 (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
- Qoffset2s,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
- Qoffset2s,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 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
- Qoffset2s,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
- Qoffset2s,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

URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 2

URA UPDATE CONFIRM (Step 11)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.13.5   Test requirement

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

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

8.3.3.   UTRAN Mobility Information

8.3.3.2   UTRAN Mobility Information: Failure (Invalid message reception)

8.3.3.2.1   Definition

8.3.3.2.2   Conformance Requirements

When the UE receives an invalid UTRAN MOBILITY INFORMATION message, it shall transmit a UTRAN MOBILITY INFORMATION FAILURE message on the DCCH using AM RLC and set the value "protocol error" in the IE "failure cause". The IE "protocol error information" in this message shall also be set to an appropriate value. The UE shall not utilize any identities relayed in the erroneous message, and it shall resume normal operations.

8.3.3.2.3   Test Purpose

To confirm that the UE ignore the erroneous UTRAN MOBILITY INFORMATION message and report this event to the UTRAN by sending UTRAN MOBILITY INFORMATION FAILURE message, stating the appropriate failure cause and information.

8.3.3.2.4   Method of test

Initial Conditions

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 brought to CELL_FACH state. SS transmits a UTRAN MOBILITY INFORMATION message to the UE on the DCCH using AM-RLC mode. In this message, the all IEs except "Message Type" are not present. The UE shall respond by transmitting the UTRAN MOBILITY INFORMATION FAILURE message, indicating "protocol error" in IE "failure cause" and also "ASN.1 violation and encoding error" in IE "Protocol error information". After receiving the UTRAN MOBILITY INFORMATION FAILURE message, SS waits for T305 to expire. The UE shall transmit a CELL UPDATE message with the original U-RNTI identity assigned. SS sends CELL UPDATE CONFIRM message to the UE on the downlink DCCH.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The initial state of the UE is CELL_FACH state.
2	←		UTRAN MOBILITY INFORMATION	See specific message content.
3	→		UTRAN MOBILITY INFORMATION FAILURE	UE shall transmit this message to report the error in UTRAN MOBILITY INFORMATION message. It shall include the appropriate cause in the message.
4				SS waits for a period up to timer T305 to allow the UE to start performing a cell updating procedure.
5	→		CELL UPDATE	
6	←		CELL UPDATE CONFIRM	

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Information Element	Value/remark
All IEs	Not Present

UTRAN MOBILITY INFORMATION FAILURE (Step 3)

Information Element	Value/remark
Message Type RRC transaction identitifer Integrity check info	Not checked. The presence if 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.
Failure Cause - Failure Cause - Protocol Error Information	Check to see if set to 'Protocol error' Check to see if set to ASN.1 violation and encoding error'

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'B
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'B
Cell update cause	Check to see if set to 'periodical cell updating'

CELL UPDATE CONFIRM (Step 6)

Use the same message sub-type as in Annex A.

8.3.3.2.5 Test Requirement

After step 2 the UE shall transmit UTRAN MOBILITY INFORMATION FAILURE message, indicating the value "protocol error" in IE "failure cause" and also "ASN.1 violation and encoding error" in IE "protocol error information".

After step 4 the UE shall initiate a periodic cell updating procedure by transmitting CELL UPDATE message on the CCCH. In this message, the U-RNTI identity shall be set to the same value as assigned during the RRC connection establishment procedure.

8.3.4 Active set update in soft handover

8.3.4.4 Active set update in soft handover: Invalid Configuration

8.3.4.4.1 Definition

8.3.4.4.2 Conformance requirement

If the UTRAN attempts to add a radio link but the additional radio link is specified in both IE "Radio Link Addition Information" and IE "Radio Link Removal Information", the UE transmits an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC and maintain its current communication status with the radio links.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.4.3 Test purpose

To confirm that the UE transmits an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC, if the received ACTIVE SET UPDATE message includes a radio link which is specified in both IE "Radio Link Addition Information" and IE "Radio Link Removal Information".

8.3.4.4.4 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 8.3.4.4

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	-60	-60

Table 8.3.4.4 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE 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 8.3.4.4. 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. SS then transmits an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the same primary scrambling code in IE "Primary CPICH Info" of both IE "Radio Link Addition Information" and IE "Radio Link Removal Information". When the UE receives this message, it transmits an ACTIVE SET UPDATE FAILURE message which is set to "Invalid configuration" in IE "failure cause" on the uplink DCCH using AM RLC to the SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.4
2	→		MEASUREMENT REPORT	
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes the same primary scrambling code in IE "Primary CPICH Info" of both IE "Radio Link Addition Information" and IE "Radio Link Removal Information".
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "Invalid configuration" in IE "failure cause".

Specific Message Contents

ACTIVE SET UPDATE (Step 3)

The message to be used in this test is defined in the default message content clause, 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
- DPCH frame offset	Calculated value from COUNT-C-SFN frame difference
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to same code as assigned for cell 2

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	Not Present
- Spreading factor	Reference TS 34.108 clause 6.10 Parameter set
- 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

ACTIVE SET UPDATE FAILURE (Step 4)

Information Element	Value/remark
Integrity check info	Not Checked
Failure cause	Check to see if it's set to 'Invalid configuration'

8.3.4.4.5 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 FAILURE message, setting "Invalid configuration" in IE "failure cause" and sent on the uplink DCCH using AM RLC.

8.3.4.5 Active set update in soft handover: Reception of an ACTIVE SET UPDATE message in wrong state

8.3.4.5.1 Definition

8.3.4.5.2 Conformance requirement

If the UE is in another state than CELL_DCH state upon reception of the ACTIVE SET UPDATE message, the UE shall transmit an ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.5.3 Test purpose

To confirm that the UE transmit an ACTIVE SET UPDATE FAILURE message whenit receives an ACTIVE SET UPDATE message in any state other then CELL_DCH.

8.3.4.5.4 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 8.3.4.5

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	-60	-60

Table 8.3.4.5 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 establishes a radio access bearer service in the CELL_FACH state in cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.2. 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" indicating the addition of cell 2 into the active set. When the UE receives this message, UE shall transmit ACTIVE SET UPDATE FAILURE message, with the IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state", on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.5
2			Void	
3	←		ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information".
4	→		ACTIVE SET UPDATE FAILURE	IE "failure cause" set to the cause value "protocol error" and includes the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

Specific Message Content

ACTIVE SET UPDATE

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~~	~~0~~

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	Calculated value from Cell synchronisation information
- Secondary CPICH info	Not Present
- DL channelisation code	This IE is repeated for all existing downlink DPCHs allocated to the UE
- Secondary scrambling code	Not Present
- Spreading factor	Reference TS 34.108 clause 6.10 Parameter set
- 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

8.3.4.5.5 Test requirement

After step 1, the UE shall not transmit MEASUREMENT REPORT message.

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message on the DCCH. In this message, the value "Message not compatible with receiver state" shall be set in IE "Protocol Error Information".

8.3.4.6 Void

8.3.4.7 Active set update in soft handover: Invalid Message Reception

8.3.4.7.1 Definition

8.3.4.7.2 Conformance Requirement

The UE shall keep its old configuration when the UE receives an ACTIVE SET UPDATE message, which does not include any IEs except IE "Message Type" and transmit an ACTIVE SET UPDATE FAILURE message which set value "protocol error" in IE "failure cause" and also value "ASN.1 violation or encoding error" in IE "Protocol error cause".

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.7.3 Test Purpose

To confirm that the UE retains its active set list and transmits an ACTIVE SET UPDATE FAILURE message when it receives an invalid ACTIVE SET UPDATE message.

8.3.4.7.4 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 (Integrity protection algorithm is not applied at the start of test)

Test Procedure

Table 8.3.4.7

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	-60	-60

Table 8.3.4.7 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.

The UE establishes a radio access bearer in CELL_DCH in cell 1. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.7. 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. SS transmits an ACTIVE SET UPDATE message which does not include any IEs except IE "Message Type". The UE shall transmit an ACTIVE SET UPDATE FAILURE message, stating the reason "ASN.1 violation or encoding error" in the IE "Protocol error information".

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.4.7
2	→		MEASUREMENT REPORT	
3		←	ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which does not include any IEs except IE "Message Type"
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "ASN.1 violation error or encoding error" in IE "protocol error information".

Specific Message Contents

ACTIVE SET UPDATE (Step 3)

Information Element	Value/remark
All IEs	Not Present

ACTIVE SET UPDATE FAILURE (Step 4)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	ASN.1 violation or encoding error

8.3.4.7.5 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 FAILURE message on the DCCH. In this message, the value "ASN.1 violation or encoding error" shall be set in IE "Protocol Error Information".

8.3.5 Hard Handover

[Editor's note: This test is included in the "Physical channel reconfiguration", "Radio bearer establishment", "Radio bearer reconfiguration", "Radio bearer release" and "Transport channel reconfiguration".]

8.3.6 Inter-system hard handover from GSM to UTRAN

The content of this clause has been moved to 3GPP TS 51.010-1, clause 60.

8.3.7 Inter-system hard handover from UTRAN to GSM

Clauses 8.3.7 contains test procedures to be used for executing Inter-system Handover from UTRAN to GSM tests. Table 8.3.7-1 contains a summary of the different combinations of parameters being tested, together with a reference to the appropriate generic test procedure. If a test uses a parameter which the UE under test does not support, the test shall be skipped. Test cases in this clause are applicable only to the UE supporting both UTRAN and GSM. The test TEST USIM shall support service 27 to carry out these test cases.

Table 8.3.7-1

From	To	State of call	Ref. clause	Exec counter	Remark
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1	1	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1	2	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.1	3	call active state
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM HR	U10	8.3.7.1	4	call active state
UTRAN (Streaming/unknown/ uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.2	1	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps CS data	U10	8.3.7.2	2	Same data rate
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 57.6 kbps CS data	U10	8.3.7.2	3	Same data rate
UTRAN (Streaming/unknown/ uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	1	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 14.4 kbps CS data	U10	8.3.7.3	2	Data rate down grading
UTRAN (Streaming/unknown/ uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBS)	GSM 28.8 kbps CS data	U10	8.3.7.3	3	Data rate down grading
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U1	8.3.7.4	1	During call establishment
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.5	1	failure case

UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.6	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.7	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.8	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.9	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.10	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.11	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.12	1	failure case
UTRAN AMR (conversational/speech/ uplink:12.2 DL:12.2 kbps/CS RAB + uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U1	8.3.7.13	1	call under establishment

8.3.7.1 Inter system handover from UTRAN/To GSM/Speech/Success

8.3.7.1.1 Definition

8.3.7.1.2 Conformance requirement

When the UE receives an HANDOVER FROM UTRAN COMMAND message from UTRAN the UE shall take the following actions:

- Establish the connection to the other radio access system, by using the contents of the IE "Inter system message". This IE contains candidate/ target cell identifier(s) and radio parameters relevant for the other radio access system.

- For each IE "Remaining radio access bearer", associate the radio access bearer given by the IE "RAB info" to the radio resources in the target system given by the IE "Inter system message". Other information for making the association may be included in the IE "Inter system message" and requirements may be stated in the specifications relevant for the target system [FFS].

- Switch the current connection to the other radio access system.

- NOTE 1: Requirements concerning the establishment of the radio connection towards the other radio access system and the signalling procedure are outside the scope of the present document.

NOTE 2: The release of the UMTS radio resources is initiated by the other system.

NOTE 3: Currently only one radio access bearer can be associated with the IE "Inter-system message", and this association is limited to the radio access bearers in the CS domain. It is assumed that all the radio access bearers in the PS domain, if any, remain after the handover.

Reference(s)

TS 25.331 clause 8.3.7.3.

8.3.7.1.3 Test purpose

To test that the UE supporting both GSM and UTRAN handovers from a UTRAN serving cell to the indicated channel of GSM target cell when the UE is in the speech call active state and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.1.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports GSM ARM,

- UE supports GSM EFR,

- UE supports GSM HR,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 2.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS starts GSM cell and configures a traffic channel, then sends HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the UTRAN cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS through GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum four times, each time with different target channel in the GSM cell.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, 4, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1
2	SS			The SS configures cell 2 as a GSM cell with a traffic channel: for GSM AMR (M = 1); or for GSM EFR (M = 2); or for GSM FR (M = 3); or for GSM HR (M = 4).
3		←	HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM AMR (M = 1); or the target channel for GSM EFR (M = 2); or the target channel for GSM FR (M = 3); or the target channel for GSM HR (M = 4).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9		←	PHYSICAL INFORMATION	
10	→		SABM	
11		←	UA	
12	→		HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.

Specific message contents

For execution:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

For execution 2:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 2

For execution 3:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
- Message sequence number	SS provides the value of this IE, from its internal counter.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE system	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

For execution 4:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE system	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

8.3.7.1.5 Test requirement

After step 12 the ongoing call shall be continued on the GSM cell.

8.3.7.2 Inter system handover from UTRAN/To GSM/Data/Same data rate/Success

8.3.7.2.1 Definition

8.3.7.2.2 Conformance requirement

When the UE receives an HANDOVER FROM UTRAN COMMAND message from UTRAN the UE shall take the following actions:

- Establish the connection to the other radio access system, by using the contents of the IE "Inter system message". This IE contains candidate/ target cell identifier(s) and radio parameters relevant for the other radio access system.

- For each IE "Remaining radio access bearer", associate the radio access bearer given by the IE "RAB info" to the radio resources in the target system given by the IE "Inter system message". Other information for making the association may be included in the IE "Inter system message" and requirements may be stated in the specifications relevant for the target system [FFS].

- Switch the current connection to the other radio access system.

NOTE 1: Requirements concerning the establishment of the radio connection towards the other radio access system and the signalling procedure are outside the scope of the present document.

NOTE 2: The release of the UMTS radio resources is initiated by the other system.

NOTE 3: Currently only one radio access bearer can be associated with the IE "Inter-system message", and this association is limited to the radio access bearers in the CS domain. It is assumed that all the radio access bearers in the PS domain, if any, remain after the handover.

Reference(s)

TS 25.331 Clause 8.3.7.3.

8.3.7.2.3 Test purpose

To test that the UE handovers to the indicated channel of same data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.2.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 2.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports UTRAN Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports GSM 14.4 kbps data (HSCSD or full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),

- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user date (E-TCH/F28.8)),

- UE supports GSM 57.6 kbps data,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 2.

Test Procedure

The SS starts the UTRAN cell and brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS starts GSM cell and configures a traffic channel (e.g. 14.4 kbps data channel for M = 1), then sends HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with different target channel in the GSM cell.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:14.4 DL:14.4 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 3).
2	SS			The SS configures cell 2 as a GSM cell with a traffic channel: for GSM 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
3		←	HANDOVER FROM UTRAN COMMAND GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data (M = 1); or for GSM 28.8 kbps data (M = 2); or for GSM 57.6 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5		→	HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
6		→	HANDOVER ACCESS	
7		→	HANDOVER ACCESS	
8		→	HANDOVER ACCESS	
9		←	PHYSICAL INFORMATION	
10		→	SABM	
11		←	UA	
12		→	HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.

Specific message contents

For execution :

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

If the UE supports 14.4 kbps single slot:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 14.5 kbit/s radio interface rate (14.4 kbit/s user data (TCH/F14.4))

If the UE supports HSCSD:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.3.1 of GSM 51.010, except that the Description of a multi-slot configuration supporting 14.4 kbps user data.

For execution 2:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

If the UE supports enhanced circuit switched full rate traffic channel for 28.8 kbps user data:

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 51.010, except that the CHANNEL MODE IE is included with value = data, 29.0 kbit/s radio interface rate (28.8 kbit/s user data (E-TCH/F28.8))

If the UE supports HSCSD:

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.3.1 of GSM 51.010, except that the Description of a multi-slot configuration supporting 28.8 kbps user data.

For execution 3:

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.3.1 of GSM 51.010, except that the Description of a multi-slot configuration supporting 57.6 kbps user data.

8.3.7.2.5 Test requirement

After step 12 the ongoing call shall be continued on the GSM cell.

8.3.7.3 Inter system handover from UTRAN/To GSM/Data/Data rate down grading/Success

8.3.7.3.1 Definition

8.3.7.3.2 Conformance requirement

When the UE receives an HANDOVER FROM UTRAN COMMAND message from UTRAN the UE shall take the following actions:

- Establish the connection to the other radio access system, by using the contents of the IE "Inter system message". This IE contains candidate/ target cell identifier(s) and radio parameters relevant for the other radio access system.

- For each IE "Remaining radio access bearer", associate the radio access bearer given by the IE "RAB info" to the radio resources in the target system given by the IE "Inter system message". Other information for making the association may be included in the IE "Inter system message" and requirements may be stated in the specifications relevant for the target system [FFS].

- Switch the current connection to the other radio access system.

  NOTE 1: Requirements concerning the establishment of the radio connection towards the other radio access system and the signalling procedure are outside the scope of the present document.

  NOTE 2: The release of the UMTS radio resources is initiated by the other system.

NOTE 3: Currently only one radio access bearer can be associated with the IE "Inter-system message", and this association is limited to the radio access bearers in the CS domain. It is assumed that all the radio access bearers in the PS domain, if any, remain after the handover.

Reference(s)

TS 25.331 Clause 8.3.7.3.

8.3.7.3.3 Test purpose

To test that the UE handovers to the indicated channel of lower data rate in the GSM target cell when it is in the data call active state in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.3.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 clause 26.6.5.1 or clause 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 2.

UE: CC State U10 in cell 1

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports UTRAN Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports UTRAN Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs,

- UE supports GSM 14.4 kbps data (HSCSD or full rate traffic channel for 14.4 kbit/s user data (TCH/F14.4)),

- UE supports GSM 28.8 kbps data (HSCSD or enhanced circuit switched full rate traffic channel for 28.8 kbit/s user date (E-TCH/F28.8)),

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 2.

Test Procedure

The SS starts the UTRAN cell and brings the UE into data call active state (CC state U10) with a suitable configuration (e.g. Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs for M = 1). The SS starts GSM cell and configures a traffic channel (e.g. 14.4 kbps data channel for M = 1), then sends HANDOVER FROM UTRAN COMMAND indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Depending on the PIXIT parameters the above procedure is executed maximum three times, each time with different target channel in the GSM cell.

Expected sequence

This sequence is performed for a maximum execution counter M = 1, 2, 3, depending on the PIXIT parameters.

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1, the configuration is: Streaming/unknown/uplink:28.8 DL:28.8 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/uplink:57.6 DL:57.6 kbps/CS RAB + uplink:3.4 DL:3.4 kbps SRBs (for M = 2 and 3).
2	SS			The SS configures cell 2 as a GSM cell with a traffic channel: for GSM 14.4 kbps data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
3		←	HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM 14.4 kbps data (M = 1 and 2); or for GSM 28.8 kbps data (M = 3).
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5		→	HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
6		→	HANDOVER ACCESS	
7		→	HANDOVER ACCESS	
8		→	HANDOVER ACCESS	
9		←	PHYSICAL INFORMATION	
10		→	SABM	
11		←	UA	
12		→	HANDOVER COMPLETE	The SS receives the message on the traffic channel of GSM cell.

Specific message contents

For execution 1:

Same as the message contents of clause 8.3.7.2 for M = 1.

For execution 2:

Same as the message contents of clause 8.3.7.2 for M = 1.

For execution 3:

Same as the message contents of clause 8.3.7.2 for M = 2.

8.3.7.3.5 Test requirement

After step 12 the ongoing call shall be continued on the GSM cell.

8.3.7.4 Inter system handover from UTRAN/To GSM/Speech/Establishment/Success

8.3.7.4.1 Definition

8.3.7.4.2 Conformance requirement

When the UE receives an HANDOVER FROM UTRAN COMMAND message from UTRAN the UE shall take the following actions:

- Establish the connection to the other radio access system, by using the contents of the IE "Inter system message". This IE contains candidate/ target cell identifier(s) and radio parameters relevant for the other radio access system.

- For each IE "Remaining radio access bearer", associate the radio access bearer given by the IE "RAB info" to the radio resources in the target system given by the IE "Inter system message". Other information for making the association may be included in the IE "Inter system message" and requirements may be stated in the specifications relevant for the target system [FFS].

- Switch the current connection to the other radio access system.

NOTE 1: Requirements concerning the establishment of the radio connection towards the other radio access system and the signalling procedure are outside the scope of the present document.

NOTE 2: The release of the UMTS radio resources is initiated by the other system.

NOTE 3: Currently only one radio access bearer can be associated with the IE "Inter-system message", and this association is limited to the radio access bearers in the CS domain. It is assumed that all the radio access bearers in the PS domain, if any, remain after the handover.

Reference(s)

TS 25.331 Clause 8.3.7.3.

8.3.7.4.3   Test purpose

To test that the UE handovers to the indicated channel in the GSM target cell when it is in the call establishment phase in the UTRAN serving cell and receives an HANDOVER FROM UTRAN COMMAND.

8.3.7.4.4   Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE : CC State U1 in cell 1

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports UTRAN AMR,

- UE supports GSM FR,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U1 on cell 2.

Test Procedure

The SS starts the UTRAN cell and the UE is triggered to initialise an MO speech call. During the call establishment phase, after the SS receives SETUP message the SS starts GSM cell and configures a dedicated channel, then sends the UE an HANDOVER FROM UTRAN COMMAND indicating the dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	U1
3	SS			The SS starts the GSM cell and configure a dedicated channel SDCCH.
4	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 51.010 version 8.2.0 Release 1999

8.3.7.4.5   Test requirement

At step 13 the SS shall receive HANDOVER COMPLETE message on the dedicated channel of the GSM cell.

8.3.7.5 Inter system handover from UTRAN/To GSM/Speech/Failure

8.3.7.5.1 Definition

8.3.7.5.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology, it shall

- resume the connection to UTRAN using the resources used before receiving the HANDOVER FROM UTRAN COMMAND message; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference(s)

TS 25.331 Clause 8.3.7.5.

8.3.7.5.3 Test purpose

To test that the UE reactivates the old channel and transmits HANDOVER FROM UTRAN FAILURE message to the network on the old channel in UTRAN cell when it receives an HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover can not be established.

8.3.7.5.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 clause 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE: CC State U10 in cell 1

Related ICS/IXIT statement(s)

- UE supports both GSM and UTRAN Radio Access Technologies,

- UE supports GSM FR,

- UE supports UTRAN AMR,

- UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS starts GSM cell without activating any dedicated channel in the cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but can not complete the handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into UTRAN U10 state in cell 1
2	SS			The SS configures cell 2 as a GSM cell but without any traffic channel.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: the target channel for GSM FR which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	physical channel failure
Inter-system message	Not Checked

8.3.7.5.5 Test requirement

After step n+1 the SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.6 Inter system handover from UTRAN/To GSM/Speech/Failure (L2 Establishment)

8.3.7.6.1 Definition

8.3.7.6.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology , as is unable to obtain L2 establishment it shall

- resume the connection to UTRAN using the resources used before receiving the HANDOVER FROM UTRAN COMMAND message; and

- transmit the HANDOVER FROM UTRAN FAILURE message on uplink DCCH using AM RLC.

Reference(s)

3GPP TS 25.331 clause 8.3.7

TS 04.06 Clause 5.4.1.3

TS 04.08 Clause 3.1.5

8.3.7.6.3 Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "physical channel failure" in IE "Inter_RAT HO failure cause", when it receives a HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover cannot be established due to failure in L2 establishment.

8.3.7.6.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51010-1 section 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE: CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. SS activates a dedicated GSM traffic channel then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. When the UE does not succeed in establishing the connection to the target radio access technology it shall revert back to UTRA configuration establish the UTRA physical channel(s) used at the time for reception of HANDOVER FROM UTRAN COMMAND transmit the HANDOVER FROM UTRAN FAILURE.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2		SS		The SS configures cell 2 as a GSM cell with traffic channel.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	←		PHYSICAL INFORMATION	Allows a proper transmission by the MS. Sent in unacknowledged mode as soon as the SS has detected a HANDOVER ACCESS. As soon as MS detects it then it stops T3124. On SS side T3105 could be started N times at the maximum as long as the step 8 is not performed
10	→		SABM	To establish L2 connection
11		SS		SS does not sent UA frame
12	UE			On T200 expiration, SS sends N200 times the SABM frame (steps 10) Then MS deactivates new channels and reactivates old UTRA resources it had before receiving the handover command
13	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell. Sent in acknowledge mode The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	physical channel failure
Inter-system message	Not Checked

8.3.7.6.5 Test requirement

The SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.7 Inter system handover from UTRAN/To GSM/Speech/Failure (L1 Synchronization)

8.3.7.7.1 Definition

8.3.7.7.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology, as is unable to obtain L1 synchronization it shall

- resume the connection to UTRAN using the resources used before receiving the HANDOVER FROM UTRAN COMMAND message; and

- transmit the HANDOVER FROM UTRAN FAILURE message on uplink DCCH using AM RLC.

Reference(s)

TS 25.331 Clause 8.3.7.5

TS 04.06 Clause 5.4.1

8.3.7.7.3 Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "physical channel failure" in IE "Inter_RAT HO failure cause", when it receives a HANDOVER FROM UTRAN COMMAND and the connection to GSM for handover cannot be established due failure in L1 Synchronization.

8.3.7.7.4 Method of test

Initial conditions

System Simulator : 2 cell - Cell 1 is UTRAN, Cell 2 is GSM. GSM 51.010 version 4.4.0 section 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10). The SS starts GSM cell activating dedicated channel in the cell, then sends HANDOVER FROM UTRAN COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The power level of target GSM cell is kept at very low level. The UE receives the command and configures itself accordingly but cannot complete the

handover. The SS checks that the handover is failed by checking that the UE transmits the HANDOVER FROM UTRAN FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1.
2	SS			The SS configures cell 2 as a GSM cell with a traffic channel.
3	←		HANDOVER FROM UTRAN COMMAND-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM FR in GSM Cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
5	→		HANDOVER ACCESS	The SS receives this burst on the traffic channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
6	→		HANDOVER ACCESS	
7	SS			The target GSM Trafic Channel is Switched off
8	→		HANDOVER FROM UTRAN FAILURE	The SS receives the message on the old channel of UTRAN cell. The cause in the IE "inter-RAT change failure" is set to "physical channel failure"

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	physical channel failure
Inter-system message	Not Checked

8.3.7.7.5 Test requirement

The SS shall receive HANDOVER FROM UTRAN FAILURE message on the old channel of the UTRAN cell.

8.3.7.8 Inter system handover from UTRAN/To GSM/Speech/Failure (Invalid Inter-RAT message)

8.3.7.8.1 Definition

8.3.7.8.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology, as the Inter-RAT message received is invalid, it shall

- resume the connection to UTRAN using the resources used before receiving the INTER-SYSTEM HANDOVER COMMAND message; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.6

8.3.7.8.3 Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "Inter-RAT protocol error" in IE "Inter_RAT HO failure cause", when it receives a Handover From UTRAN message, with the IE "Inter-RAT message" received within the HANDOVER FROM UTRAN COMMAND message not including a valid inter RAT handover message in accordance with the protocol specifications for the target RAT.

8.3.7.8.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS then sends an HANDOVER FROM UTRAN COMMAND message not including a valid inter RAT handover message in accordance with the protocol specifications for the target RAT, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and finds that the Inter Rat message is Invalid. The SS checks that the handover is failed by checking that the UE transmits the INTER-SYSTEM HANDOVER FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HandoverFromUTRAN Command-GSM	Send on cell 1 (UTRAN cell) and the message carries an Invalid HANDOVER FROM UTRAN COMMAND -GSM
3	→		InterSystemHandoverFailure	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	Now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Contains an Invalid Handover Command.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	Inter-RAT protocol error
Inter-system message	Not checked

8.3.7.8.5   Test requirement

In step 3 the SS shall receive INTER-SYSTEM HANDOVER FAILURE message on the old channel of the UTRAN cell.

8.3.7.9   Inter system handover from UTRAN/To GSM/Speech/Failure (Unsupported configuration)

8.3.7.9.1   Definition

8.3.7.9.2   Conformance requirement:

If the UE does not succeed to establish the connection to the other radio access technology, as the configuration specified in the Inter-RAT message is not supported, it shall

- resume the connection to UTRAN using the resources used before receiving the INTER-SYSTEM HANDOVER COMMAND message; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.8

8.3.7.9.3   Test purpose

To Test that the UE shall keep its old configuration and transmit a HANDOVER FROM UTRAN FAILURE message, which is set to "configuration unsupported" in IE "Inter_RAT HO failure cause", when it receives a Handover From UTRAN message, with the IE "Inter-RAT message" received within the HANDOVER FROM UTRAN COMMAND message including a Configuration not Supported by the UE.

8.3.7.9.4   Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS then sends an HANDOVER FROM UTRAN COMMAND message   including a Configuration not Supported by the UE in inter RAT handover message, to the UE through DCCH of the serving UTRAN cell. The UE receives the command and

finds that the configuration given in Inter Rat message is not supported. The SS checks that the handover is failed by checking that the UE transmits the INTER-SYSTEM HANDOVER FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HandoverFromUTRAN Command-GSM	Send on cell 1 (UTRAN cell) and the message carries an unsupported configuration.
3	→		InterSystemHandoverFailure	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	Now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Contains a Configuration not supported By the UE (Handover to a Band not supported by the UE)

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	configuration unsupported

Inter-system message	Not checked

8.3.7.9.5 Test requirement

In step 3 the SS shall receive INTER-SYSTEM HANDOVER FAILURE message on the old channel of the UTRAN cell.

8.3.7.10 Inter system handover from UTRAN/To GSM/Speech/Failure (Reception by UE in CELL_FACH)

8.3.7.10.1 Definition

8.3.7.10.2 Conformance requirement

If the UE does not succeed to establish the connection to the other radio access technology, as the Message received is not compatible with receiver state, it shall

- resume the connection to UTRAN using the resources used before receiving the INTER-SYSTEM HANDOVER COMMAND message; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.8a

8.3.7.10.3 Test purpose

The UE shall keep its old configuration when the UE receives a HANDOVER FROM UTRAN COMMAND message when in CELL_FACH state and then transmit a HANDOVER FROM UTRAN COMMAND FAILURE message on the DCCH using AM RLC, which sets value "protocol error" in IE "Inter_RAT HO failure cause" and is set to "Message not compatible with receiver state" in IE "Protocol error cause".

8.3.7.10.4 Method of test

Initial conditions

System Simulator : 1 UTRAN Cell

UE : RRC State CS-DCCH_FACH (state 6-6) as specified in clause 7.4 of TS 34.108, on Cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in RRC is in State CS-DCCH_FACH (state 6-6) as specified in clause 7.4 of TS 34.108, on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into RRC Cell__FACH_DTCH. It then Transmits Radio Bearer reconfiguration PDU to move UE to Cell_FACH state. The SS starts GSM cell without activating any dedicated channel in the cell, then sends INTER-SYSTEM HANDOVER COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the handover. The SS checks that the handover is failed by checking that the UE transmits the INTER-SYSTEM HANDOVER FAILURE message to the SS in UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into CS-DCCH_FACH (state 6-6) _FACH state in cell 1
2		←	InterSystemHandoverCommand-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM
3	→		InterSystemHandoverFailure	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	Protocol Error
-Diagnostics Type	Type1
-Protocol Error Cause	Message Not Compatible With Receiver State
Inter-system message	Not Checked

8.3.7.10.5   Test requirement

After step 2 the SS shall receive INTER-SYSTEM HANDOVER FAILURE message on the old channel of the UTRAN cell.

8.3.7.11   Inter system handover from UTRAN/To GSM/Speech/Failure (Invalid message reception)

8.3.7.11.1   Definition

8.3.7.11.2   Conformance requirement:

If the UE does not succeed to establish the connection to the other radio access technology, as the Handover Message received is short to decode into a valid message, it shall

- resume the connection to UTRAN using the resources used before receiving the INTER-SYSTEM HANDOVER COMMAND message; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7

8.3.7.11.3 Test purpose

The UE shall keep its old configuration when the UE receives a Handover From UTRAN message, which will be short to decode into a valid Handover From UTRAN message. It shall then transmit an RRC STATUS message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to "ASN.1 violation or encoding error";

8.3.7.11.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS then sends an HANDOVER FROM UTRAN COMMAND message, which will be short to decode into a valid Handover From UTRAN message, to the UE through DCCH of the serving UTRAN cell. The SS checks that the handover is failed by checking that the UE transmits an RRC STATUS message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to "ASN.1 violation or encoding error";

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	←		HandoverFromUTRAN Command-GSM	Send on cell 1 (UTRAN cell) and the message is short in length to be decoded into a valid Handover From UTRAN command
3	→		RRCStatus	The SS receives the message on the old channel of UTRAN cell.

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

A Short Message that shall not result in a valid Handover From UTRAN Command shall be sent.

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol error information	Checked to see if set to "ASN.1 Violation or Encoding error"

8.3.7.11.5 Test requirement

In step 3 the SS shall receive RRC Status message in the UTRAN cell.

8.3.7.12 Inter system handover from UTRAN/To GSM/Speech/Failure (Physical channel Failure and Reversion Failure)

8.3.7.12.1 Definition

8.3.7.12.2 Conformance requirement:

If the UE does not succeed to establish the connection to the other radio access technology and fail to resume the connection to UTRAN using the resources used before receiving the INTER-SYSTEM HANDOVER COMMAND message, it shall

- perform a cell update procedure; and

- transmit the INTER-SYSTEM HANDOVER FAILURE message on uplink DCCH using AM RLC. When the successful delivery of the INTER-SYSTEM FAILURE message has been confirmed by RLC, the procedure ends.

Reference

3GPP TS 25.331 clause 8.3.7.5

8.3.7.12.3 Test purpose

The UE shall perform a cell update when the UE fails to revert to the old configuration after the detection of physical channel failure in the target RAT cell as given in HANDOVER FROM UTRAN procedure. After the UE completes cell update procedure, the UE transmit HANDOVER FROM UTRAN FAILURE message on the DCCH using AM RLC, which is set IE "failure cause" to "physical channel failure".

8.3.7.12.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is UTRAN, Cell 2 is GSM. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 2.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS starts the UTRAN cell and brings the UE into call active state (CC state U10) with AMR. The SS starts GSM cell without activating any dedicated channel in the cell, then sends INTER-SYSTEM HANDOVER COMMAND indicating a dedicated channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The UE receives the command and configures itself accordingly but cannot complete the handover and wants to revert to the old configuration, but the UE cannot revert to the old configuration because the SS shall not use the old configuration. The UE transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits the INTER-SYSTEM HANDOVER FAILURE message to the SS in UTRAN cell, on the DCCH using AM RLC, setting the value of IE "failure cause" to " physical channel failure".

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			The SS brings the UE into UTRAN U10 state in cell 1
2	SS			The SS configures cell 2 as a GSM cell but without any traffic channel.
3	←		HandoverFromUTRAN Command-GSM	Send on cell 1 (UTRAN cell) and the message indicates: The target channel for GSM FR, which does not exist in the GSM cell.
4	UE			The UE accepts the handover command and switches to the GSM traffic channel specified in the InterSystemHandoverCommand-GSM
5	SS			SS removes the Physical channel (DPCH) allocated to the mobile before handover command transmission
6	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
7	←		CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
8				The SS configure the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
10	→		InterSystemHandoverFailure	The IE "failure cause" shall be set to "physical channel failure"

Specific message contents

Same as the message contents of clause 8.3.7.1 for M = 3.

CELL UPDATE (Step n+1)

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

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step n+2)

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

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
Frequency info	
- UARFCN uplink (Nu)	Reference to TS34.108 clause 5.1 Test frequencies
- UARFCN downlink (Nd)	Reference to TS34.108 clause 5.1 Test frequencies
Maximum allowed UL TX power	33dBm
CHOICE Mode	FDD
Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	100
- PDSCH with SHO DCH info	Not Present
- PDSCH code mapping	Not Present
- Downlink DPCH info for each RL	
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	0 chips
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	2
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Code number	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
- Scrambling code change	No change
- TPC combination index	0
- SSDT Cell Identity	-a
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH	Not Present

HANDOVER FROM UTRAN FAILURE

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink HANDOVER FROM UTRAN COMMAND –GSM message
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.
Inter-RAT handover failure	
-Inter-RAT handover failure cause	physical channel failure
Inter-system message	Not Checked

8.3.7.12.5   Test requirement

In step 3 the SS shall receive RRC Status message in the UTRAN cell.

8.3.7.13 Inter system handover from UTRAN/To GSM/ success / call under establishment

8.3.7.13.1 Definition

8.3.7.13.2 Conformance requirement:

When the UE receives an HANDOVER FROM UTRAN COMMAND message from UTRAN the UE shall take the following actions:

- Establish the connection to the other radio access system, by using the contents of the IE "Inter system message". This IE contains candidate/ target cell identifier(s) and radio parameters relevant for the other radio access system.

- For each IE "Remaining radio access bearer", associate the radio access bearer given by the IE "RAB info" to the radio resources in the target system given by the IE "Inter system message". Other information for making the association may be included in the IE "Inter system message" and requirements may be stated in the specifications relevant for the target system [FFS].

- Switch the current call under establishment to the other radio access system.

Reference

3GPP TS 25.331 clause 8.3.7.3

Test purpose

To test that the UE supporting both GSM and UTRAN handovers from a UTRAN serving cell to the indicated channel of GSM target cell when the UE is in call establishment phase and receives an HANDOVER FROM UTRAN COMMAND.

To Test that the UE continues the call in GSM cell, after Succesful completion of the Handover.

8.3.7.13.4 Method of test

Initial conditions

System Simulator : 1 UTRAN cell.

UE : CC State U10 in cell 1.

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports GSM FR,

UE supports UTRAN AMR,

UE supports GSM-P, GSM-E, GSM-DCS, GSM-450, GSM-480.

Foreseen final state of the UE

The UE is in CC state U10 on cell 1.

Test Procedure

The SS activates the UTRAN cell and GSM Cell. The UE is triggered to initialise an MO speech call. During the call establishment phase, the SS is configured to not transmit the RLC Acknowledgment for SETUP message. SS configures a dedicated channel in GSM Cell, then sends the UE an HANDOVER FROM UTRAN COMMAND indicating the

dedicated channel in the target GSM cell. After the UE receives the command it shall configure itself accordingly and switch to the new channel of the GSM cell. The SS checks whether the handover is performed by checking that the UE transmits the HANDOVER COMPLETE message to the SS in GSM cell. The SS checks MS correctly retransmits CC SETUP message, that was not acknowledged by UTRAN RLC Layer before the Handover, following completion of the handover to GSM cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			To trigger the UE to initialise an MO call
2	→		SETUP	SS does not Acknowledge it
3	SS			The SS starts the GSM cell and configure a dedicated channel SDCCH.
4	←		HANDOVER FROM UTRAN COMMANDGSM	Send on cell 1 (UTRAN cell) and the message indicates: the dedicated channel SDCCH.
5	UE			The UE accepts the handover command and switches to the GSM dedicated channel specified in the HANDOVER FROM UTRAN COMMAND-GSM
6	→		HANDOVER ACCESS	The SS receives this burst on the dedicated channel of cell 2 (GSM cell) It implies that the UE has switched to GSM cell.
7	→		HANDOVER ACCESS	
8	→		HANDOVER ACCESS	
9	→		HANDOVER ACCESS	
10	←		PHYSICAL INFORMATION	
11	→		SABM	
12	←		UA	
13	→		HANDOVER COMPLETE	The SS receives the message on the dedicated channel of GSM cell.
14	->		SETUP	The SS receives the message on the dedicated channel of GSM cell.
15	<-		CHANNEL RELEASE	

Specific message contents

HANDOVER FROM UTRAN COMMAND-GSM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- Frequency Band	GSM/DCS 1800 Band
- CHOICE GSM message	Single GSM message
- Message	GSM HANDOVER COMMAND formatted as Variable Length BIT STRING without Length Indicator. The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 11.10-1 version 8.2.0 Release 1999

8.3.7.13.5 Test requirement

At step 14 the SS shall receive SETUP message on the dedicated channel of the GSM cell, and at step.8.3.8 Inter system cell reselection to UTRAN

[Editor's note: This test is FFS until R2000 core specification will be defined.]

8.3.9 Inter system cell reselection from UTRAN

[Editor's note: This test is FFS until R2000 core specification will be defined.]

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

3GPP TSG-T1S Meeting #23
Lund, Sweden, 22st May – 24nd May 2002

Tdoc T1-020305

Tdoc T1S-020279r1

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1** CR **180** | ⌘ | 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Update of L2/PDCP conformance testing to be aligned on the referenced version of TS 25.323 and TS 25.331, March 2002 version for R99	
Source: ⌘	CETECOM GmbH	
Work item code: ⌘	TEI	***Date:*** ⌘ 2001-05-11
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: ⌘	Updates of L2/PDCP conformance testing, 3GPP TS 34.123-1, clause 7.3 due to changes in TS 25.323v3.8.0 (PDCP) and TS 25.331v3.8.0 (RRC) R99.
Summary of change: ⌘	1. Update of test case "7.3.3.1 Data transmission if lossless SRNS Relocation is supported". In this test case, the PDU type to be used has changed from PDCP Data PDU to PDCP SeqNum PDU. Both PDCP peers (UE and SS) shall send the next expected SN. Updated are the test procedure description, the Expected sequence and Specific message contents accordingly. 2. Update of test case 7.3.3.1, test procedure and Expected sequence: Inserted two new test steps to indicate, that PDCP SeqNum PDU are transmitted during lossless Relocation procedure. In the Expected Sequence, step 5 comment is extended according the updated conformance requirements. 3. Due to more detailed description of lossless SRNS relocation within PDCP, it is necessary to **draft two new test cases for lossless SRNS relocation behaviour** to keep the test coverage. This CR proposes to reserve test case numbers 7.3.3.3 and 7.3.3.4 to be defined. 4. Due to more detailed description of PDCP configurations in TS 25.331 RRC (with reference to TS 23.060), this CR proposes to add a new sub-clause **7.3.4 PDCP configuration testing** based on RRC specification TS 25.331. **A number of 4 new test cases is proposed to be reserved to be drafted and included accordingly.** The test cases shall cover PDCP behaviour when RRC reconfiguration procedures, cell update/URA update or UTRAN mobility Information procedures are performed. In addition, invalid PDCP configuration behaviour as described in RRC shall be checked here. 5. Updated are conformance requirement for all PDCP test cases and their references accordingly. 6. Editorial clarification in clause 7.3.1.1 General assumptions, in alignment to the parameter used in the PDCP PDU data field. 7. Editorial clarification for "RB reconfiguration Complete Message" in clause 7.3.1.2.2 Default PDCP Message Contents. 8. Editorial clarification for Uplink RLC mode in IE RLC info of RADIO BEARER SETUP message specified in all test cases (UM RLC, AM RLC)

		9. Editorial clarification in the test purpose of test case 7.3.2.2.3 Extension of used compression methods
		10. Editorial clarification of described test procedure description in test cases 7.3.2.2.4, 7.3.3.1 and 7.3.3.2.
		11. Editorial clarification for Transmission RLC Discard mode in IE RLC info and IE "RB with PDCP information list" as defined in RADIO BEARER SETUP message for test cases 7.3.3.1 and 7.3.3.2
		12. Test case behavoir correction when testing lossless SRNS relocation (test cases 7.3.3.1 and 7.3.3.2) by using RB reconfiguration and Cell update procedure.

Consequences if not approved:	⌘	PDCP tests are in alignment to the core specifications

Clauses affected:	⌘	Clause 7.3 PDCP

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

Other comments:	⌘	Releases affected: R99 and REL-4

7 Layer 2: 3GPP TS 34.123-1 V4.2.0 (2002-03)

7.3 PDCP

7.3.1 General

7.3.1.1 General assumptions

If not otherwise mentioned, the same procedures as used in RRC test specification (TS 34.123-1) or in the Generic procedure (TS 34.108) applies to reach Initial conditions for PDCP testing. In this test description, common test sequences for PDCP (clause 7.3.4.1) are defined and are applied either as preamble or post amble to establish or release a Packet Switched (PS) connection for a test case.

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

Detailed IP header compression coding mechanism as well as mechanism related error recovery and packet reordering described in IETF RFC 2507 are not verified.

For PDCP testing TCP/IP data type and UDP/IP data type as Non-TCP/IP data types are applied for IP data.

The IP data packet size shall be limited to 1500 bytes as defined in 3GPP TS 23.107, clause 6.5.1and 6.5.2 (range of QoS attributes).

An UE supporting IP Header compression protocol RFC 2507 shall be capable to store a header compression context of at least 512 bytes (Integer).

It shall be possible to reconfigure PDCP settings while UE test loop mode 1. With the applied test method using UE test loop mode 1, the UE as Originator and Receiver of PDCP SDUs (concurrent transmission) is tested.

7.3.1.2 Common Test sequences and Default message contents for PDCP

General

The settings and parameter used in the "Common Test sequences for PDCP" are described in the "Default PDCP Message Contents". If not explicitly shown there, the message contents are identical with the default contents for the same message type of layer 3 messages for RRC tests, to establish a packet switched session or connection. The contents of test case specific message parameters are described in the test case (Expected Sequence). If not explicitly shown, default settings and parameter are used as message content for all Common Test sequences.

7.3.1.2.1 Common Test sequences for PDCP

7.3.1.2.1.1 Setup a UE terminated PS session using IP Header compression in AM RLC (using UE Test loop test mode 1)

Initial Conditions

UE is in Idle mode.

Test procedure

After having received the System Information, the SS starts to setup a RRC connection. After connection establishment and Radio Bearer Setup, the UE test loop mode 1 is activated and the UE test loop mode 1 is closed.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		SYSTEM INFORMATION	
2	←		PAGING TYPE 1	CN domain identity: PS domain Paging cause: interactive session
3	→		RRC CONNECTION REQUEST	
4	←		RRC CONNECTION SETUP	Connection Setup message PS sessions in AM RLC used in RRC testing matches here
5	→		RRC CONNECTION SETUP COMPLETE	
6	←		ACTIVATE RB TEST MODE	
7	→		ACTIVATE RB TEST MODE COMPLETE	
8	←		RADIO BEARER SETUP	The Radio Bearer configuration is as described in TS 34.108, clause 6.10, Prioritised RAB No. 23: QoS parameter: Traffic Class: Interactive or Background, max. UL:64 kbps max. DL:64 kbps, Residual BER as described in TS 34.108, clause: 6.10.
9	→		RADIO BEARER SETUP COMPLETE	
10	←		CLOSE UE TEST LOOP	The SS initiates UE test loop mode 1, indicated by the Parameter: "UE test loop mode" 1 (X1=0 and X2=0) The "DCCH dummy transmission" not used: disabled: (Y1=0)
11	→		CLOSE UE TEST LOOP COMPLETE	After having received the test mode acknowledgement, the UE test loop mode 1 is activated.

Specific message contents

The contents of test case specific message parameters are described in the test case (Expected Sequence). Default contents of messages are described in the clause Default PDCP Message Contents.

7.3.1.2.1.2   Setup a UE terminated PS session using IP Header compression in UM RLC (using UE Test loop test mode 1)

Initial Conditions

UE is in idle mode.

Test procedure

After having received the System Information, the SS starts to setup a RRC connection. After connection establishment and Radio Bearer Setup, the UE test loop mode 1 is activated and the UE test loop mode 1 is closed.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		←	SYSTEM INFORMATION	
2		←	PAGING TYPE 1	CN domain identity: PS domain Paging cause: interactive session
3	→		RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	Connection Setup message PS sessions in UM RLC used in RRC testing matches here
5	→		RRC CONNECTION SETUP COMPLETE	
6		←	ACTIVATE RB TEST MODE	
7	→		ACTIVATE RB TEST MODE COMPLETE	
8		←	RADIO BEARER SETUP	The Radio Bearer configuration is as described in TS 34.108, clause 6.10, Prioritised RAB No. 23: QoS parameter: Traffic Class: Interactive or Background, max. UL:64 kbps max. DL:64 kbps, Residual BER as described in TS 34.108, clause: 6.10.
9	→		RADIO BEARER SETUP COMPLETE	
10		←	CLOSE UE TEST LOOP	The SS initiates UE test loop mode 1, indicated by the Parameter: "UE test loop mode"1 (X1=0 and X2=0) The "DCCH dummy transmission" not used: disabled: (Y1=0)
11	→		CLOSE UE TEST LOOP COMPLETE	After having received the test mode acknowledgement, the UE test loop mode 1 is activated.

Specific message contents

The contents of test case specific message parameters are described in the test case (Expected Sequence) Default contents of messages are described in the clause Default PDCP Message Contents.

7.3.1.2.1.3 Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)

Initial Conditions

UE is in connected mode, a UE test loop mode 1 for PDCP is activated, and the UE loop mode 1 is "closed".

Test procedure

The UE opens the UE test loop mode 1, deactivates the test mode and the PS session, releases the Radio Bearer and enters Idle mode.

Expected Sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		←	OPEN UE TEST LOOP	The SS terminates the UE test loop mode 1, (see described parameter)
2	→		OPEN UE TEST LOOP COMPLETE	After having received the test mode acknowledgement, the test loop mode 1 is deactivated.
3		←	DEACTIVATE RB TEST MODE	SS deactivates the RB test mode
4	→		DEACTIVATE RB TEST MODE COMPLETE	UE shall confirm the previous message. Afterwards, the UE returns to normal operation
5		←	RRC CONNECTION RELEASE	SS terminates the connection
6	→		RRC CONNECTION RELEASE COMPLETE	UE confirms the connection release and returns to Idle mode

Specific message contents

The contents of test case specific message parameter is described in the test case (Expected Sequence). Default contents of messages are described in the clause Default PDCP Message Contents.

7.3.1.2.2   Default PDCP Message Contents

This clause contains the default values of RRC messages used for PDCP testing, other than those specified in TS 34.108 clauses 6 and 9, and default values of PDCP messages. Unless indicated otherwise in specific test cases, only PDCP related specific message contents are described here which shall be transmitted by the system simulator in RRC messages, and which are required to be received from the UE under test. If not explicitly described, the message contents are identical with the default contents for the same message type of layer 3 messages for RRC tests, to establish a packet switched session or connection.

The necessary L3 messages are listed in alphabetic order, with the exception of the SYSTEM INFORMATION messages, where it is the information elements which are listed in alphabetic order (this is because some information elements occur in several SYSTEM INFORMATION types).

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Default SYSTEM INFORMATION:

> NOTE: SYSTEM INFORMATION BLOCK TYPE 1 (except for PLMN type "GSM-MAP"), SYSTEM
> INFORMATION BLOCK TYPE 8, SYSTEM INFORMATION BLOCK TYPE 9, SYSTEM
> INFORMATION BLOCK TYPE 10, SYSTEM INFORMATION BLOCK TYPE 14, SYSTEM
> INFORMATION BLOCK TYPE 15 and INFORMATION BLOCK TYPE 16 messages are not used.

Contents of CONNECTION SETUP message:

Information Element	Value/remark

Capability update requirement
    - UE radio access capability update requirement
    - System specific capability update requirement list
	
	TRUE
	UE only supports 1 system

Contents of CONNECTION SETUP COMPLETE message:

Information Element	Value/remark

UE radio access capability
 	
    - Conformance test compliance
    - PDCP Capability
      - Max PDCP SN
      - Support of lossless SRNS relocation
      - Support for RFC2507
        - Max HC context space
    - RLC Capability
    - Transport channel capability
    - RF Capability
    - Physical channel capability
    - UE multi-mode/multi-RAT capability
    - Security Capability
    - LCS Capability
    - Measurement capability
	Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings
	
	(TCP_SPACE + NON_TCP_SPACE))

UE system specific capability	Value will be check. UE must include the classmark information for the supported system

Contents of RB RECONFIGURATION COMPLETE message:

Information Element	Value/remark

- Downlink counter syncronisation info
  - RB with PDCP information list
    - RB with information
	Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

Contents of ACTIVATE RB TEST MODE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000100B

Contents of ACTIVATE RB TEST MODE COMPLETE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000101B

Contents of DEACTIVATE RB TEST MODE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000110B

Contents of DEACTIVATE RB TEST MODE COMPLETE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000111B

Contents of CLOSE UE TEST LOOP message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000000B
UE test loop mode	000000100B (X2=0 and X1=0 for UE test mode 1, Y1=0 DCCH dummy transmission disabled)
UE test loop mode 1 LB setup	
- Length of UE loop mode 1 LB setup IE	4 octets
- LB setup list	
- LB setup RAB subflow #1	
- Z13…Z0 (Uplink RLC SDU size in bits)	0…16383 (binary coded, Z13 most significant bit); value as negotiated

Contents of CLOSE UE TEST LOOP COMPLETE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000001B

Contents of OPEN UE TEST LOOP message:

Information Element	Value/remark
IE Identifier (only in AM)	1000xxxx
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000010B

Contents of OPEN UE TEST LOOP COMPLETE message:

Information Element	Value/remark
Protocol Discriminator	TS 24.007, 11.2.3.1.1
Skip indicator	TS 24.007, 11.2.3.1.2
Message type	01000011B

7.3.2 IP Header Compression and PID assignment

7.3.2.1 UE in RLC AM

7.3.2.1.1 Transmission of uncompressed Header

7.3.2.1.1.1 Definition and applicability

Applicable for all UEs supporting RLC AM and a Radio Bearer as described in the Common Test Sequences. The UE shall be capable to deal with TCP/IP and UDP/IP data packets with uncompressed IP header.

7.3.2.1.1.2 Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

   ...

- transfer of user data. This function is used for conveyance of data between users of PDCP services. Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

- distinguish different types of header compression packets within a header compression protocol. ~~PDCP shall be able (…) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol.~~

The mapping of the PID values shall follow the general rules listed below:

- PID value "0" shall indicate "no compression". PID value "0" shall be used in a PDCP PDU containing in its Data field a PDCP SDU that is unchanged by the Sender and that shall not be decompressed by the Receiver;~~- PID value 0 is reserved permanently for no compression~~

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1.1.

7.3.2.1.1.3 Test purpose

The test case consists of two test procedures:

The first test procedure verifies, that the "PDCP Data" PDU is used for uncompressed IP header packets, if no IP header compression is configured by higher layers. The second test procedure verifies, that the "PDCP No header" PDU is used for uncompressed IP header packets, if no IP header compression is configured by higher layers.

1. To verify, that the UE transmits and receives in acknowledged mode (RLC AM) TCP/IP and UDP/IP data packets without IP header compression as configured by higher layers.

2. To verify, that PID assignment rules are correctly applied, if usage of "PDCP Data" PDU are negotiated, i.e. the UE shall recognize PID value = 0 for a received TCP/IP and UDP/IP data packet and it shall use PID=0 to transmit IP data packets, if no IP header compression is negotiated. If usage of "PDCP No Header" PDU is negotiated, no PID assignment is used for transmitting and receiving TCP/IP and UDP/IP data packets.

7.3.2.1.1.4 Method of test

Initial conditions

UE is in idle mode.

Test procedure 1: Usage of "PDCP Data" PDU and no IP header compression is configured.

Test procedure 2: No IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of PS – Yes/No

PIXIT: Test_PDCP_TCP/IP_Packet1

PIXIT: Test_PDCP_UDP/IP_Packet1

Test procedure 1: Transmission of uncompressed IP header packets using PDCP Data PDU

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC AM using Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP Data" PDU has been configured by higher layers.

b) The SS sends a TCP/IP data packet with uncompressed IP Header.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PDCP PDU type and shall handle the received data packet with the appropriate decoding method. Then it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration using PDCP Data PDU.

d) The SS receives and decodes the TCP/IP data packet. The decoded data packet shall be identical with the data as sent before.

e) Step b) to d) shall be repeated by using a UDP/IP data packet with uncompressed IP Header.

The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in AM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU). The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction		Message	Comments
	UE	**SS**		
2	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
3	←		PDCP Data	The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU). The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes with PID value = 0, there was no IP header compression applied for the UDP/IP packet. Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
4	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS decodes the received data
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) which fits to the below described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	 No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for AM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup - RB identity	 20
- PDCP info - Support of lossless SRNS relocation	 False (IE "Support of lossless SRNS relocation" only present, if RLC "In-sequence delivery" is TRUE and in AM)
- PDCP PDU header	present
- RLC info - Downlink RLC mode	 (AM RLC)
- Uplink RLC mode	(AM RLC)

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Test procedure 2: Transmission of uncompressed IP header packets using No Header PDU

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC AM using Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP No Header" PDU has been configured by higher layers.

b) The SS sends a TCP/IP data packet with uncompressed IP Header.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PDCP PDU type and shall handle the received data packet with the appropriate decoding method. Then it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration using PDCP No Header PDU.

d) The SS receives and decodes the TCP/IP data packet. The decoded data packet shall be identical with the data as sent before.

e) Step b) to d) shall be repeated by using a UDP/IP data packet with uncompressed IP Header.

f) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in AM RLC (using UE test loop mode 1)				
1	←		PDCP No Header	The SS creates a TCP/IP packet without IP header compression (PDCP No Header PDU). The SS sends a PDCP No Header PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: data: below described TCP/IP packet After having received the PDCP No Header PDU, the UE decodes the PDU and recognizes, there was no PID applied for the TCP/IP packet. Therefore, no IP header decompression shall be applied for this packet. Then, the data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP No Header	The UE sends a PDCP No Header PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
				The SS creates a UDP/IP packet without IP header compression (PDCP No Header PDU).

Step	Direction	Message	Comments
	UE | **SS**		
3	←	PDCP No Header	The SS sends a PDCP No Header PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: data: below described UDP/IP packet After having received the PDCP No Header PDU, the UE decodes the PDU and recognizes, there was no PID applied for the UDP/IP packet. Therefore, no IP header decompression shall be applied for this packet. Then, the data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
4	→	PDCP No Header	The UE sends a PDCP No Header PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS decodes the received data
		Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1).	

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) which fits to the below described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup	
- RAB info	
- RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for AM RLC
	Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	20
- PDCP info	
- Support of lossless SRNS relocation	False (IE "Support of lossless SRNS relocation" only present, if RLC "In-sequence delivery" is TRUE and in AM)
- PDCP PDU header	absent
- RLC info	
- Downlink RLC mode	(AM RLC)
- Uplink RLC mode	(AM RLC)

Content of PDCP No Header PDU (Step 1)

Information Element	Value/remark
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP No Header PDU (Step 3)

Information Element	Value/remark
Data	PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.1.1.5   Test requirements

1. Test requirements: Transmission of uncompressed IP header packets using PDCP Data PDU

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled correctly (PDCP Data PDU). This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

2. Test requirements: Transmission of uncompressed IP header packets using PDCP No Header PDU

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled correctly (PDCP No Header PDU). This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

7.3.2.1.2   Transmission of compressed Header

7.3.2.1.2.1   Definition and applicability

Applicable for all UEs supporting RLC AM and a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with compressed TCP/IP and UDP/IP data packets and furthermore to establish a PDCP entity which applies IP header compression protocol RFC 2507.

7.3.2.1.2.2   Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

  ──── ...

  - transfer of user data. This function is used for conveyance of data between users of PDCP services.Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

  - identify the correct header compression protocol; and

  - distinguish different types of header compression packets within a header compression protocol.──PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol.

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1.1.

7.3.2.1.2.3   Test purpose

1. To verify, that the UE transmits and receives in acknowledged mode (RLC AM) TCP/IP and UDP/IP data packets by using IP header compression protocol as described in RFC2507 as configured by higher layers.

2. To verify, that the PID assignment rules are correctly applied by the UE. The UE as shall use the correct PID value for the applied optimisation method for transmitting and receiving TCP/IP and UDP/IP data packets.

7.3.2.1.2.4   Method of test

Initial conditions

UE is in Idle mode. Usage of "PDCP Data" PDU and IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of IP header compression protocol RFC 2507 - YES/NO.

Support of PS – Yes/No

PIXIT: Test_PDCP_TCP/IP_Packet1

PIXIT: Test_PDCP_TCP/IP_Packet2

PIXIT: Test_PDCP_UDP/IP_Packet1

PIXIT: Test_PDCP_UDP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC AM using Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP Data" PDU has been configured by higher layers.

b) The SS sends a "normal" TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

e) The SS sends a TCP/IP data packet with packet type: Full_Header, PID=1.

NOTE: According to the compression protocol RFC 2507, this is necessary to transmit the created CONTEXT and the assigned CID.

f) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

g) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

h) The SS sends a TCP/IP data packet with packet type: Compressed_TCP, PID=2.

i) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

j) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

k) Step b) to d) is repeated for a "normal" UDP/IP data packet, PID=0.

l) Step e) to g) is repeated for a UDP/IP data packet with packet type: Full_Header, PID=1.

m) The SS sends a UDP/IP data packet with packet type: Compressed_non_TCP, PID=4.

n) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

o) The SS receives and decodes the UDP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

p) The SS deactivates the UE tests loop mode 1 and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
Setup a UE terminated PS session using IP Header compression in AM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression. The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type [TCP/IP]) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU, recognizes PID value = 1 applied for this TCP/IP data packet and decompresses it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction UE | SS	Message	Comments
4	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
5	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 2 (Compressed_TCP packet type) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU, recognizes PID value = 2 applied for this TCP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
6	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
7	←	PDCP Data	The SS creates a UDP/IP packet without compressed IP header compression. The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes with PID value = 0, there was no IP header compression applied for the UDP/IP packet. Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction		Message	Comments
	UE	**SS**		
8		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.

Step	Direction UE | SS	Message	Comments
9	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 1 applied for this UDP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
10	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
11	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 4 (Compressed _non-TCP packet type) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 4 applied for this UDP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
12	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for AM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	20
- PDCP info	
- Support of lossless SRNS relocation	False (IE "Support of lossless SRNS relocation" only present, if RLC "In-sequence delivery" is TRUE and in AM)
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)
- RLC info	
- Downlink RLC mode	(AM RLC)
- Uplink RLC mode	(AM RLC)

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type	000
PID	00001 (Full_Header, PID = 1)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 5)

Information Element	Value/remark
PDU type	000
PID	00010 (Compressed_TCP, PID = 2)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 7)

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 9)

Information Element	Value/remark
PDU type	000
PID	00001 (Full_Header, PID = 1)
Data	PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 11)

Information Element	Value/remark
PDU type	000
PID	00100 (Compressed_non-TCP, PID = 4)
Data	PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.1.2.5   Test requirements

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled with the correct compression protocol. This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

7.3.2.2   UE in RLC UM

7.3.2.2.1   Transmission of uncompressed Header

7.3.2.2.1.1   Definition and applicability

Applicable for all UEs supporting RLC UM and a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with TCP/IP and UDP/IP data packets with uncompressed IP header.

7.3.2.2.1.2   Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

    ...

    - transfer of user data. This function is used for conveyance of data between users of PDCP services ~~Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;~~

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

    - distinguish different types of header compression packets within a header compression protocol. ~~PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol;~~

The mapping of the PID values shall follow the general rules listed below:

    - PID value "0" shall indicate "no compression". PID value "0" shall be used in a PDCP PDU containing in its Data field a PDCP SDU that is unchanged by the Sender and that shall not be decompressed by the Receiver; ~~PID value 0 is reserved permanently for no compression.~~

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1.1.

7.3.2.2.1.3   Test purpose

The test case consists of two test procedures:

The first test procedure verifies, that the "PDCP Data" PDU is used for uncompressed IP header packets, if no IP header compression is configured by higher layers. The second test procedure verifies, that the "PDCP No header" PDU is used for uncompressed IP header packets, if no IP header compression is configured by higher layers.

1. To verify, that the UE transmits and receives in unacknowledged mode (RLC UM) TCP/IP and UDP/IP data packets without IP header compression as configured by higher layers.

2. To verify, that PID assignment rules are correctly applied, if usage of "PDCP Data" PDU are negotiated, i.e. the UE shall recognize PID value = 0 for a received TCP/IP and UDP/IP data packet and it shall use PID=0 to transmit IP data packets, if no IP header compression is negotiated. If usage of "PDCP No Header" PDU is negotiated, no PID assignment is used for transmitting and receiving TCP/IP and UDP/IP data packets.

7.3.2.2.1.4   Method of test

Initial conditions

UE is in Idle mode.

Test procedure 1: Usage of "PDCP Data" PDU and no IP header compression is configured.

Test procedure 2: no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of PS – Yes/No

PIXIT: Test_PDCP_TCP/IP_Packet1

PIXIT: Test_PDCP_UDP/IP_Packet1

Test procedure 1: Transmission of uncompressed IP header packets using PDCP Data PDU

   a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC UM using
       Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP Data" PDU has been
       configured by higher layers.

   b) The SS sends a TCP/IP data packet with uncompressed IP Header.

   c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PDCP PDU type
       and shall handle the received data packet with the appropriate decoding method. Then it forwards the data to its
       Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration using
       PDCP Data PDU.

   d) The SS receives and decodes the TCP/IP data packet. The decoded data packet shall be identical with the data
       as sent before.

   e) Step b) to d) shall be repeated by using a UDP/IP data packet with uncompressed IP Header.

The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression (PDCP Data PDU). The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
				The SS creates a UDP/IP packet without IP header compression (PDCP Data PDU).

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Step	Direction		Message	Comments
	UE	**SS**		
3	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes with PID value = 0, there was no IP header compression applied for the UDP/IP packet. Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
4		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS decodes the received data
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fits to the below described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup - RB identity	21
- PDCP info	
- PDCP PDU header	present
- RLC info	
- Downlink RLC mode	(UM RLC)

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Test procedure 2: Transmission of uncompressed IP header packets using No Header PDU

   a)   The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC UM using
        Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP No Header" PDU has
        been configured by higher layers.

   b)   The SS sends a TCP/IP data packet with uncompressed IP Header.

   c)   After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PDCP PDU type
        and shall handle the received data packet with the appropriate decoding method. Then it forwards the data to its
        Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration using
        PDCP No Header PDU.

   d)   The SS receives and decodes the TCP/IP data packet. The decoded data packet shall be identical with the data
        as sent before.

   e)   Step b) to d) shall be repeated by using a UDP/IP data packet with uncompressed IP Header.

   f)   The SS deactivates the Loop back test mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1	←		PDCP No Header	The SS creates a TCP/IP packet without IP header compression (PDCP No Header PDU). The SS sends a PDCP No Header PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: data: below described TCP/IP packet After having received the PDCP No Header PDU, the UE decodes the PDU and recognizes, there was no PID applied for the TCP/IP packet. Therefore, no IP header decompression shall be applied for this packet. Then, the data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→		PDCP No Header	The UE sends a PDCP No Header PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function for the received data
				The SS creates a UDP/IP packet without IP header compression (PDCP No Header PDU).

Step	Direction		Message	Comments
	UE	**SS**		
3	←		PDCP No Header	The SS sends a PDCP No Header PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: data: below described UDP/IP packet After having received the PDCP No Header PDU, the UE decodes the PDU and recognizes, there was no PID applied for the UDP/IP packet. Therefore, no IP header decompression shall be applied for this packet. Then, the data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
4		→	PDCP No Header	The UE sends a PDCP No Header PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS decodes the received data
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fits to the below described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain

- RB information to setup
  - RB identity
  - PDCP info
	21
	
	False

- PDCP PDU header	absent

- RLC info
  - Downlink RLC mode
  - Uplink RLC mode
	(UM RLC)
	(UM RLC)

Content of PDCP No Header PDU (Step 1)

Information Element	Value/remark
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP No Header PDU (Step 3)

Information Element	Value/remark
Data	PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.2.1.5   Test requirements

1. Test requirements: Transmission of uncompressed IP header packets using PDCP Data PDU

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled correctly (PDCP Data PDU). This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

2. Test requirements: Transmission of uncompressed IP header packets using PDCP No Header PDU

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled correctly (PDCP No Header PDU). This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

7.3.2.2.2   Transmission of compressed Header

7.3.2.2.2.1   Definition and applicability

Applicable for all UEs supporting RLC UM and a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with compressed TCP/IP and UDP/IP data packets and furthermore to establish a PDCP entity which applies IP header compression protocol RFC 2507.

7.3.2.2.2.2   Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

  ~~...~~

  - transfer of user data. This function is used for conveyance of data between users of PDCP services.~~Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;~~

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

  - distinguish different types of header compression packets within a header compression protocol. ~~PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol.~~

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1.1.

7.3.2.2.2.3   Test purpose

  1. To verify, that the UE transmits and receives in unacknowledged mode (RLC UM) TCP/IP and UDP/IP data packets by using IP header compression protocol as described in RFC2507 as configured by higher layers.

  2. To verify, that the PID assignment rules are correctly applied by the UE. The UE as shall use the correct PID value for the applied optimisation method for transmitting and receiving TCP/IP and UDP/IP data packets.

7.3.2.2.2.4   Method of test

Initial conditions

UE is in Idle mode. Usage of "PDCP Data" PDU and no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of IP header compression protocol RFC 2507 - YES/NO

Support of PS – Yes/No

PIXIT: Test_PDCP_TCP/IP_Packet1

PIXIT: Test_PDCP_TCP/IP_Packet2

PIXIT: Test_PDCP_UDP/IP_Packet1

PIXIT: Test_PDCP_UDP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC UM using Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP Data" PDU has been configured by higher layers.

b) The SS sends a "normal" TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

e) The SS sends a TCP/IP data packet with packet type: Full_Header, PID=1.

NOTE: According to the compression protocol RFC 2507, this is necessary to transmit the created CONTEXT and the assigned CID.

f) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

g) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

h) The SS sends a TCP/IP data packet with packet type: Compressed_TCP, PID=2.

i) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

j) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

k) Step b) to d) is repeated for a "normal" UDP/IP data packet, PID=0.

l) Step e) to g) is repeated for a UDP/IP data packet with packet type: Full_Header, PID=1.

m) The SS sends a UDP/IP data packet with packet type: Compressed_non_TCP, PID=4.

n) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decompression protocol. Then, it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

o) The SS receives and decodes the UDP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

p) The SS deactivates the UE test loop test mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression. The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type [TCP/IP]) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU, recognizes PID value = 1 applied for this TCP/IP data packet and decompresses it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.

Step	Direction		Message	Comments
	UE	**SS**		
4	→		PDCP Data	The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity. The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
5	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 2 (Compressed_TCP packet type) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU, recognizes PID value = 2 applied for this TCP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
6	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
7	←		PDCP Data	The SS creates a UDP/IP packet without compressed IP header compression. The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes with PID value = 0, there was no IP header compression applied for the UDP/IP packet. Therefore, no IP header decompression is applied for this packet. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction		Message	Comments
	UE	SS		
8	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
9		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 1 applied for this UDP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
10	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: below described UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
11		←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 4 (Compressed _non-TCP packet type) data: below described UDP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 1 applied for this UDP/IP data packet and decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to the Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction		Message	Comments
	UE	**SS**		
12	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (Data PDU with Header) PID value = 0,1 or 4 (depending on which UDP/IP header format is used by the UE) data: previously received UDP/IP packet After reception of this UDP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup	
- RAB info	
- RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	21
- PDCP info	False
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)
- RLC info	
- Downlink RLC mode	(UM RLC)
- Uplink RLC mode	(UM RLC)

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type	000
PID	00001 (Full_Header, PID = 1)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 5)

Information Element	Value/remark
PDU type PID Data	000 00010 (Compressed_TCP, PID = 2) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 7)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 9)

Information Element	Value/remark
PDU type PID Data	000 00001 (Full_Header, PID = 1) PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 11)

Information Element	Value/remark
PDU type PID Data	000 00100 (Compressed_non-TCP, PID = 4) PDCP test data type #2: UDP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.2.2.5   Test requirements

The UE shall return the TCP/IP and UDP/IP data packets as indication, that the previous packets have been received and handled with the correct compression method. This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

7.3.2.2.3   Extension of used compression methods

7.3.2.2.3.1   Definition and applicability

Applicable for all UEs supporting RLC UM and a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with compressed TCP/IP data packets and furthermore to establish a PDCP entity which applies IP header compression protocol: RFC 2507.

7.3.2.2.3.2   Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

   ...

   - transfer of user data. Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;

~~PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol.~~

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

- distinguish different types of header compression packets within a header compression protocol.

~~The PDCP layer shall be able to support several header compression protocols and it shall always be possible to extend the list of supported protocols in the future.~~

~~The table (PID value allocation table) is reconfigured every time the PDCP entity is reconfigured, with a change in the supported header compression protocols.~~

~~The assignment of the PID values follow the general rules listed below:~~

~~PID values are reassigned for the PDCP entity after renegotiation of the header compression protocols;~~

~~the list of negotiated (or re-negotiated) header compression entities shall be examined, starting from the first one in the list. The number of PID values to be assigned is specified in the clause for this protocol.~~

3. The mapping of the PID values shall follow the general rules listed below:
- PID values are re-mapped for the PDCP entity after any reconfiguration of the header compression protocols for that entity.

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1

TS 25.323 clause 5.1.1.

~~TS 25.323 clause 5.1~~.

7.3.2.2.3.3   Test purpose

1. To verify, that the UE is able to handle an extended PID value allocation table by header compression protocol IETF RFC 2507 after PDCP reconfiguration as configured by RRC.

7.3.2.2.3.4   Method of test

Initial conditions

UE is in Idle mode. Usage of "PDCP Data" PDU and no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of IP header compression protocol RFC 2507 - YES/NO

Support of PS – Yes/No

PIXIT: Test_PDCP_TCP/IP_Packet1

PIXIT: Test_PDCP_TCP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC UM using Common test procedures for mobile terminated PS switched sessions (with the UE test loop mode 1). Usage of "PDCP Data PDU" and no optimisation method has been configured by higher layers.

b) The SS sends a TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

e) The SS reconfigures (using RRC Radio Bearer Reconfiguration message) the PDCP entity by extending the PID value allocation table and therefore the applied optimisation method with the IP header compression protocol RFC 2507. The UE test loop mode 1 in RLC UM is still active.

f) The SS sends a TCP/IP data packet (no compression packet type), PID=0.

g) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

h) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

i) The SS sends a TCP/IP data packet with packet type: Full_Header, PID=1.

j) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

k) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

l) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression. The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression shall be applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3	←		RRC RADIO BEARER RECONFIGURATION	SS extends the "PID value allocation table" with IP header compression PID (RFC 2507) in the UE.
4		→	RRC RADIO BEARER RECONFIGURATION COMPLETE	UE acknowledges its new settings
5	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (normal packet type [TCP/IP]) data: below described TCP/IP packet. After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression shall be applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.

Step	Direction UE | SS	Message	Comments
6	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
7	←	PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type [TCP/IP]) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 1 applied for this TCP/IP data packet and shall decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
8	→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

RRC RADIO BEARER RECONFIGURATION message

The contents of the RRC RADIO BEARER RECONFIGURATION message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	1
RB information to reconfigure	
- PDCP info	
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	 No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup - RB identity	 21
- PDCP info - PDCP PDU header	 present
- RLC info - Downlink RLC mode	 (UM RLC)
- Uplink RLC mode	(UM RLC)

Content of PDCP Data PDU (Step 1 and 5)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP Data PDU (Step 7)

Information Element	Value/remark
PDU type PID Data	000 00001 (Full_Header, PID = 1) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.2.3.5   Test requirements

After PDCP reconfiguration, the UE shall return the TCP/IP data packets as indication, that the extension of used optimisation method are applied by UE. This verifies, that the PDCP configuration on UE side works as negotiated by the RRC.

7.3.2.2.4   Compression type used for different entities

7.3.2.2.4.1   Definition and applicability

Applicable only for an UE supporting the establishment of more than one PDCP entity in parallel, i.e. it shall be possible to configure more than one Radio Bearer Loop Back entities (each PDCP entity are assigned via PDCP-SAP to its own Radio Bearer Loop Back entity).

Applicable for all UEs supporting two Radio Bearers in RLC UM and RLC AM as described in this test case, clause 7.3.2.2.4.6 Combined PDCP Acknowledged and Unacknowledged mode configuration.

The UE shall be capable to deal with compressed TCP/IP data packets and furthermore it shall apply IP header compression protocol RFC 2507.

7.3.2.2.4.2   Conformance requirement

1. The Packet Data Convergence Protocol shall perform the following functions:

    ~~...~~

-   transfer of user data. This function is used for conveyance of data between users of PDCP services.~~Transmission of user data means that PDCP receives PDCP SDU from the NAS and forwards it to the RLC layer and vice versa;~~

2. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

    - distinguish different types of header compression packets within a header compression protocol. ~~PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol.~~

3. The mapping~~assignment~~ of the PID values shall follow the general rules listed below:

    -   PID values shall be mapped~~are assigned~~ to the different packet types independently ~~to~~at each PDCP entity;

Several PDCP entities may be defined for a UE with each using the same or different protocol type. In this version of the specification, only one header compression protocol type, RFC 2507 ~~[6]~~, is supported.~~Different PDCP entities may include header compression protocols of the same type~~

Reference(s)

TS 25.323 clause 5.

TS 25.323 clause 5.1.1.

~~TS 25.323 clause 5.1.~~

TS 25.323 clause 4.2

7.3.2.2.4.3   Test purpose

    NOTE: For this test case, the SS shall be configured to handle more than one received PDCP messages.

1. To verify, that a configured IP header compression protocol are applied to compress and decompress TCP/IP data packets by several PDCP entities in parallel, if more than one entities are established, i.e. the UE uses the same PID to transmit two TCP/IP data packets with the same content in parallel using two Radio Bearer configurations.

7.3.2.2.4.4   Method of test

Initial conditions

UE is in Idle mode. Usage of "PDCP Data" PDU and IP header compression is configured for both PDCP entities.

Related ICS/IXIT Statement(s)

Establishment of more than one PDCP entities - YES/NO.

Support of IP header compression protocol RFC 2507 - YES/NO

Support of UM RB and AM RB

Support of PS – Yes/No

IXIT: Test_PDCP_TCP/IP_Packet1

IXIT: Test_PDCP_TCP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including two radio bearer configurations in parallel in UE test loop mode 1 and in RLC UM and RLC UM using Common test procedures for mobile terminated PS switched sessions. Usage of IP header compression protocol RFC 2507 has been configured by higher layers.

b) The SS sends two successive a "normal" TCP/IP data packet, PID=0 via both PDCP configurations to their peer entities.

c) After having received the TCP/IP data packets, the PDCP entities of the UE shall recognize the PID value and shall handle the received data packet independent of the used PID with the correct decompression method. Then they forward the data to their Radio Bearer Loop Back entity. Both received data shall be returned by each Radio Bearer Loop Back entity.

d) The SS receives and decodes TCP/IP data packets according to the inserted PID. The decoded data packets shall be identical with the data as sent before.

e) After having received the TCP/IP data packets, the PDCP entities of the UE shall recognize the PID value and shall handle the received data packets independent of the used PID with the correct decompression method. Then they forward the data to their Radio Bearer Loop Back entity. Both received data shall be returned by each Radio Bearer Loop Back entity.

f) The SS receives and decodes TCP/IP data packets according to the inserted PID. The decoded data packets shall be identical with the data as sent before.

g) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1		←	PDCP Data	The SS sends two successive a PDCP Data PDU using the RLC-UM-Data-Request Primitive via both PDCP entities with the following contents to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received both PDCP Data PDUs, the UE decodes each PDU and recognizes PID value = 0 (no IP header compression applied for both TCP/IP data packets). Although the same PID is used for both PDUs, the UE shall handle they with the correct method and it forwards both data packets via PDCP-SAPs to their Radio Bearer Loop Back (RB LB) entities. The RB LB entities in UE test loop mode 1 return the received data packets and send they back to their PDCP entities.

Step	Direction		Message	Comments
	UE	**SS**		
2	→		PDCP Data	The UE sends back for each PDCP configuration a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of TCP/IP data packets, the SS applies the appropriate decoding function for both received messages depending on which PID was assigned to the received data
3		←	PDCP Data	The SS sends two successive a PDCP Data PDU using the RLC-UM-Data-Request Primitive via both PDCP entities with the following contents to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type [TCP/IP]) data: below described TCP/IP packet After having received both PDCP Data PDUs, the UE decodes each PDU and recognizes PID value = 1 (Full_Header packet type applied for both TCP/IP data packets). Although the same PID is used for both PDUs, the UE shall handle they with the correct method and it forwards both data packets via PDCP-SAPs to their Radio Bearer Loop Back (RB LB) entities. The RB LB entities in UE test loop mode 1 return the received data packets and send they back to their PDCP entities.
4	→		PDCP Data	The UE sends back for each PDCP configuration a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 data: previously received TCP/IP packet After reception of TCP/IP data packets, the SS applies the appropriate decoding function for both received messages depending on which PID was assigned to the received data
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the **RRC CONNECTION SETUP** message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup	
- RAB info	
- RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	20
- PDCP info	
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)
- RLC info	
- Downlink RLC mode	(AM RLC)
<ins>- Uplink RLC mode</ins>	<ins>(AM RLC)</ins>
- RB information to setup	(NOTE: for RB ID 21, the same RAB configurations are used (No. # 23 as described in TS 34.108) as described for RB ID 20)
- RB identity	21
- PDCP info	
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)
- RLC info	
- Downlink RLC mode	(UM RLC)
<ins>- Uplink RLC mode</ins>	<ins>(UM RLC)</ins>

Content of both PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of both PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type PID Data	000 00001 (Full_Header, PID = 1) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.2.4.5   Test requirements

The UE shall return both TCP/IP data packets as indication that the previous received data packets associated with the same PID value are handled in parallel with the same decompression protocol. This verifies, that more than one PDCP configuration on UE side using the same compression protocol is able to apply it in parallel.

7.3.2.2.4.6   Combined PDCP Acknowledged and Unacknowledged mode configuration

This configuration is based on the interactive or background / UL:64 DL 64 kbps / PS RAB. The SRB configurations are UL:3.4 DL:3.4 kbps for DCCH aligned to this combined RABs are described for SRB DL 3.4 kbps in TS 34.108, clause 6.10.2.4.1.2.2 and for SRB DL 3.4 kbps in TS 34.108, clause 6.10.2.4.1.2.1. The TFCS refer to TS34.108, clause 6.10.2.4.1.24.1.1.3 for UL and clause 6.10.2.4.1.25.2.1.3 for DL, the Physical channel parameters refer to TS 34.108, clause 6.10.2.4.1.24.1.2 for UL clause 6.10.2.4.1.25.2.2 and for DL accordingly. The configuration is applied to PDCP test cases using both the acknowledged and unacknowledged mode.

Table 7.3.2.2.4/1: Uplink Transport channel parameter for combined RABs PS AM_UM

Higher layer	RAB/Signalling RB		RAB #20	RAB #21
RLC	Logical channel type		DTCH	DTCH
	RLC mode		AM	UM
	Payload sizes, bit		316	324
	Max data rate, bps		63200	64800
	TrD PDU header, bit		16	8
MAC	MAC header, bit		4	
	MAC multiplexing		2 logical channel multiplexing	
Layer 1	TrCH type		DCH	
	TB sizes, bit		336	
	TFS	TF0, bits	0x336	
		TF1, bits	1x336	
		TF2, bits	2x336	
		TF3, bits	3x336	
		TF4, bits	4x336	
	TTI, ms		20	
	Coding type		TC	
	CRC, bit		16	
	Max number of bits/TTI after channel coding		4236	
	Uplink: Max number of bits/radio frame before rate matching		2118	
	RM attribute		130-170	

Table 7.3.2.2.4/2: Downlink Transport channel parameter for combined RABs PS AM_UM

Higher layer	RAB/Signalling RB		**RAB #20**	**RAB #21**
RLC	Logical channel type		DTCH	DTCH
	RLC mode		AM	UM
	Payload sizes, bit		316	324
	Max data rate, bps		63200	64800
	TrD PDU header, bit		16	8
MAC	MAC header, bit		4	
	MAC multiplexing		2 logical channel multiplexing	
Layer 1	TrCH type		DCH	
	TB sizes, bit		336	
	TFS	TF0, bits	0x336	
		TF1, bits	1x336	
		TF2, bits	2x336	
		TF3, bits	3x336	
		TF4, bits	4x336	
	TTI, ms		20	
	Coding type		TC	
	CRC, bit		16	
	Max number of bits/TTI after channel coding		4236	
	RM attribute		130-170	

7.3.2.2.5 Reception of not defined PID values

7.3.2.2.5.1 Definition and applicability

Applicable for all UEs supporting RLC UM and a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with compressed TCP/IP data packets and furthermore to establish a PDCP entity, which applies PDCP Data PDU if no IP header compression protocol, is negotiated.

The UE shall not forward invalid PDCP PDU data contents to its Radio Bearer.

7.3.2.2.5.2 Conformance requirement

1. Depending on the configuration by upper layers (i.e. PDCP PDU type to be used and header compressor protocol), the PDCP sublayer shall be able to:

- identify the correct header compression protocol; and

- distinguish different types of header compression packets within a header compression protocol.~~PDCP shall be able (...) to handle them with a correct header compression protocol and furthermore to indicate the type of the packet within a certain protocol;~~

2. If a PDCP entity receives a PDCP PDU with a PDU Type set to Reserved (~~see subclause 8.3.1~~...), it shall:

-    discard the PDCP PDU.

~~8.3.1~~ PDU Type

Reserved (PDUs with this encoding are invalid for this version of the protocol)

~~PID values that are used and are not defined invalidate the PDCP PDU;~~

Reference(s)

TS 25.323 clause 5.1.1.

TS 25.323 clause 9.1 and 8.3.1~~5.1.2.1.~~

7.3.2.2.5.3   Test purpose

1. To verify, that a UE considers a received PDCP PDU message with not defined PID value as invalid, i.e. such an invalid PDCP PDU is not forwarded to the Radio Bearer entity on UE side. Therefore the UE using test loop mode 1 does not return such data packet to the SS.

7.3.2.2.5.4   Method of test

Initial conditions

UE is in Idle mode. Usage of "PDCP Data" PDU and no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of IP header compression protocol RFC 2507 - YES/NO

Support of PS – Yes/No

IXIT: Test_PDCP_TCP/IP_Packet1

IXIT: Test_PDCP_TCP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including radio bearer and UE test loop mode 1 in RLC UM using Common test procedures for mobile terminated PS switched sessions. Usage of "PDCP Data PDU" and no PDCP IP header compression protocol has been configured by higher layers.

b) The SS sends a "normal" TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decoding method. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes TCP/IP data packets according to the inserted PID. The decoded data packets shall be identical with the data as sent before.

e) The SS sends a TCP/IP data packet with packet type: Full_Header, PID=1.

f) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet with the correct decoding method.

g) The SS waits an amount of time to make sure, that no returned data packet was sent by UE.

h) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in UM RLC (using UE test loop mode 1)				
1	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression shall be applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2		→	PDCP Data	The UE sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3	←		PDCP Data	The SS sends a PDCP Data PDU using the RLC-UM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 1 (Full_Header packet type [TCP/IP]) data: below described TCP/IP packet. After having received the PDCP Data PDU, the UE shall recognize, that a not defined PID value (as configured by higher layers) is inserted in the PDCP PDU. The UE shall consider this PDU as invalid, i.e. the data packet is not forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. Therefore this data packet is not returned to the SS.
4				The SS waits a amount of time to make sure, that the previously sent data packet is not returned to the SS.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)				

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in UM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for UM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
RAB information for setup - RAB info - RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for UM RLC Residual BER as described in TS 34.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	21
- PDCP info	
- PDCP PDU header	present
- RLC info	
- Downlink RLC mode	(UM RLC)
- Uplink RLC mode	(UM RLC)

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes

Content of PDCP Data PDU (Step 3)

Information Element	Value/remark
PDU type PID Data	000 00001 (Full_Header, PID = 1) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.2.2.5.5   Test requirements

The UE shall return the received TCP/IP data packet using the PDCP Data PDU with PID = 0 as indication, that the UE works as configured.

The UE shall not return the TCP/IP data packet using the PDCP Data PDU with PID = 1 as indication, that this PDU was considered as invalid by the UE. This verifies, that the PDCP configuration on UE side has considered this PDU as invalid.

7.3.3   PDCP sequence numbering when lossless SRNS Relocation

7.3.3.1   Data transmission if lossless SRNS Relocation is supported

7.3.3.1.1   Definition and applicability

Applicable for all UEs supporting RLC AM, RLC in-sequence delivery, a Radio Bearer as described in the Common Test Sequences and lossless SRNS relocation.

The UE shall be capable to deal with uncompressed TCP/IP data packets and furthermore to establish a PDCP entity which applies PDCP Sequence Numbering

7.3.3.1.2   Conformance requirement

~~The PDCP layer shall carry out the following functions during lossless SRNS relocation:~~

~~-   support PDCP sequence numbering as specified in clause 5.4.1.~~

~~For the support of lossless SRNS Relocation PDCP maintains sequence numbers for PDCP SDUs, as described in subclause 5.4.1.1.~~

~~5.4.1.1 PDCP Sequence Numbering~~

1. PDCP sequence numbering shall be applied when lossless SRNS Relocation is supported. PDCP Sequence Numbers serve to acknowledge previously transmitted PDCP SDUs prior to relocation.

~~The PDCP layer shall carry out the following during lossless SRNS relocation:~~

~~-   provide unconfirmed PDCP SDUs and sequence numbers for forwarding to the target RNC.~~

~~When a lossless SRNS Relocation is performed sequence numbers are exchanged between UE and UTRAN. They are used to confirm PDCP SDUs transmitted but not yet acknowledged by the Receiver, as described in subclause 5.4.1.3.~~

~~5.4.1.3   Sequence Number and Data Forwarding~~

2. In case of a lossless SRNS Relocation procedure, ~~as described in [1]~~:

-     the UTRAN should send to the UE the next expected UL_Receive PDCP SN; and

-     the UE shall send to the UTRAN the next expected DL_Receive PDCP SN.

This information exchange synchronises the Sequence Numbers at the UE and UTRAN PDCP entities.

Reference(s)

TS 25.323 clause 5.4.1.1

TS 25.323 clause 5.4.1.3~~.~~

~~TS 25.323 clause 5.4.1.1~~

7.3.3.1.3   Test purpose

1. To verify, that a UE supporting lossless SRNS relocation is able to receive and to send IP data packets by using PDCP Sequence Numbering as configured by higher layers.

7.3.3.1.4   Method of test

Initial conditions

SS: 2 cells - Cell A belonging to the valid SRNS (Source SRNS), Cell B belonging to the DRNS (Target SRNS). Both cells are neighbour cells. Cell A has a higher RF power level than Cell B such that an UE shall find Cell A more suitable for service.

UE: It is in Idle mode and has selected cell A with valid SRNS (Source SRNS). Usage of "PDCP Data" PDU, PDCP SeqNum PDU and no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of lossless SRNS Relocation - YES/NO

Support of PS – Yes/No

IXIT: Test_PDCP_TCP/IP_Packet1

IXIT: Test_PDCP_TCP/IP_Packet2

Test procedure

a) The SS setups a packet switched session including Radio Bearer and UE test loop mode 1 in RLC AM and in-sequence delivery using Common test procedures for mobile terminated PS switched sessions in Cell A. The RLC buffer discharge mode shall be set to "no discard". Usage of "PDCP Data" PDU, support of lossless SRNS relocation and no IP header compression has been configured by higher layers. The PDCP SN window size has been negotiated by RRC.

b) The SS sends a TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

e) The SS starts to broadcast BCCH messages on the primary CPICH in cell B with a power level higher than in cell A. The UE shall chose cell B to be more suitable for service and hence perform a cell reselection.

f) f) After completion of cell reselection, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH of cell B with the Cell update cause "Cell Reselection".

g) The SS sends a TCP/IP data packet (no compression packet type), PID=0. The PDCP SeqNum PDU is used due to lossless SRNS relocation procedure.

h) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The UE shall increase its internal Sequence Number counter by 1.The received data shall be returned by the UE via its PDCP configuration using PDCP SeqNum PDU.

i) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

gj) After having performed SRNS relocation (target RNC allocated with new S-RNTI for the UE), the Target SRNS is the valid SRNS and the SS sends a "CELL UPDATE CONFIRM" message with new RNC_ID to indicate the completion of the cell update.

hk) The UE shall confirm the reallocation.

li) The SS sends the next TCP/IP data packet (no compression packet type), PID=0 using the "PDCP Data" PDU to the UE.

mj) After having received the TCP/IP data packet, the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

nk) The SS receives and decodes TCP/IP data packets according to the inserted PID. The decoded data packets shall be identical with the data as sent before.

ol) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in AM RLC (using UE test loop mode 1) in Cell A					
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression. The DL_Send PDCP SN is set to "0". The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet Afterwards the SS increments its counter value DL_Send PDCP SN by "1". After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression shall be applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3				The SS increases the RF power level of cell B and decreases the power level of Cell A such that the UE finds cell B more suitable for service.
4				The UE cell reselection is performed and Cell B are selected for service.
5	→		RRC CELL UPDATE	Then, the UE shall inform the SS about the new cell selection by sending cell update with new parameters (parameter values as used in RRC testing).

Step	Direction		Message	Comments
	UE	SS		
6		←	PDCP SeqNum	The SS sends a PDCP SeqNum PDU including its current Sequence Number with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) SeqNum = current PDCP Sequence Number data: below described TCP/IP packet Afterwards the SS increments its counter value DL_Send PDCP SN by "1". After having received the PDCP SeqNum PDU, the UE shall set the received PDCP Sequence Number as its own valid value. It decodes the PDU, recognizes PID value = 0 applied for this TCP/IP data packet and shall decompress it with the appropriate method. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The SN synchronisation shall be considered as successfully performed after acknowledgement of SeqNum PDU transmission by lower layer in the SS. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
7	→		PDCP SeqNum	The UE sends a PDCP SeqNum PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 SeqNum = current PDCP Sequence Number data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
86		←	RRC CELL UPDATE CONFIRM	After having performed SRNS relocation, the Target SRNS is the valid SRNS and the SS sends a "CELL UPDATE CONFIRM" message See message content.~~with new parameter "RNC_ID" to indicate the completion of SRNS relocation (parameters as used in RRC testing).~~
79	→		UTRAN MOBILITY INFORMATION CONFIRM~~RNTI REALLOCATION COMPLETE~~	The UE confirms the newly received information (parameters as used in RRC testing).
108		←	PDCP Data	The SS sends the next PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet Afterwards the SS increments its counter value DL_Send PDCP SN by "1".

Step	Direction		Message	Comments
	UE	**SS**		
				After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression)
				Therefore, no IP header decompression shall be applied for this packet.
				The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity.
				The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
119	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.

Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)

Specific Message Contents

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
Capability update requirement - UE radio access capability update requirement	TRUE NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark

- Downlink counter syncronisation info
 - RB with PDCP information list
  - RB identity
  - PDCP SN info
RAB information for setup
- RAB info
 - RAB identity
	
	20
	1 (Note: next expected Sequence Number)
	
	UL: Interactive/Background 32kbps PS RAB + SRB for CCCH + SRB for DCCH (TS34.108 v4.2.0 clause6.10.2.4.4.1)
	
	DL: Interactive/Background 32kbps PS RAB + SRB for CCCH + SRB for DCCH + SRB for BCCH (TS34.108 v4.2.0 clause6.10.2.4.3.2)

 - CN domain identity
- RB information to setup
 - RB identity
 - PDCP info
  - Max PDCP SN window size
  - Support of lossless SRNS relocation
  - PDCP PDU header
- RLC info
  - Downlink RLC mode
  - In-sequence delivery
 - Uplink RLC mode
   - Transmission RLC Discard
	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs.
	QoS parameter:
	Traffic Class: Interactive or Background,
	max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for AM RLC
	
	Residual BER as described in TS 34.108, clause: 6.10
	Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
	
	PS domain
	
	20
	
	65535
	TRUE
	present
	
	(AM RLC)
	True
	(AM RLC)
	No discard Note: Default value as defined in TS 34.108, Annex B

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP SeqNum PDU (Step 6)

Information Element	Value/remark
PDU type PID Sequence number Data	001 00000 (No header compression, PID = 0) (16 Bit value) valid Sequence Number of the SS PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

CELL UPDATE CONFIRM (Step 8)

Use the message sub-type in default message content defined in Annex A, with the following exceptions.

Information Element	Value/Remarks
New U-RNTI	New value of U-RNTI different from the previous U-RNTI
Receive PDCP sequence number	IE is set to the value to be counted inside SS as next expected reception Sequence Number

UTRAN MOBILITY INFORMATION CONFIRM (Step 9)

Only the message type is checked.

Content of PDCP Data PDU (Step 108)

Information Element	Value/remark
PDU type PID Data	000 00000 (No header compression, PID = 0) PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.3.1.5 Test requirements

After having sent the " RRC CELL UPDATE ~~RRC RNTI REALLOCATION COMPLETE~~", the UE shall return the received TCP/IP data packet by using PDCP SeqNum PDUs as indication, that it supports lossless SRNS relocation. This ~~implicitly~~ verifies, that Sequence Numbering is used for lossless SRNS relocation.

7.3.3.2 Synchronisation of PDCP sequence numbers

7.3.3.2.1 Definition and applicability

Applicable for all UEs supporting RLC AM, RLC in-sequence delivery, a Radio Bearer as described in the Common Test Sequences.

The UE shall be capable to deal with compressed TCP/IP and UDP/IP data packets and furthermore it shall be capable to use IP Header compression protocol RFC 2507.

7.3.3.2.2 Conformance requirement

The PDCP SeqNum PDU shall be sent by the peer PDCP entities when synchronisation of the PDCP SN is required. (...) Synchronisation of PDCP SN is required after (...) RB reconfiguration.

~~When a lossless SRNS Relocation is performed sequence numbers are exchanged between UE and UTRAN. They are used to confirm PDCP SDUs transmitted but not yet acknowledged by the Receiver, as described in TS 25.323 subclause 5.4.1.3.~~

~~5.4.1.3 Sequence Number and Data Forwarding~~

1. In case of a lossless SRNS Relocation procedure~~, as described in [1]~~:

- the UTRAN should send to the UE the next expected UL_Receive PDCP SN; and

- the UE shall send to the UTRAN the next expected DL_Receive PDCP SN.

This information exchange synchronises the Sequence Numbers at the UE and UTRAN PDCP entities.

~~5.4.1.2 PDCP Sequence Number synchronization~~

2. For radio bearers that are configured to support lossless SRNS Relocation, the PDCP entity shall:

- if upper layer indicates to a PDCP entity that it should synchronise the PDCP SN following a RLC reset or RB reconfiguration; or

- if the UE/UTRAN PDCP entity receives an invalid "next expected UL/DL_Receive PDCP SN" from upper layer after Relocation:

    - trigger the PDCP SN synchronisation procedure by submitting one PDCP SeqNum PDU to lower layer;

- consider that the synchronisation procedure is complete on confirmation by lower layer of the successful transmission of the PDCP SeqNum PDU.

Reference(s)

TS 25.323 clause 5.4.1.3

TS 25.323 clause 5.4.1.2

7.3.3.2.3 Test purpose

1. To verify, that the UE supporting lossless SRNS relocation as configured by higher layers is able to handle the "PDCP SeqNum" PDU to synchronize the used PDCP Sequence Number after reconfiguration of the Radio Bearer.

7.3.3.2.4 Method of test

Initial conditions

SS: 2 cells - Cell A belonging to the valid SRNS (Source SRNS), Cell B belonging to the DRNS (Target SRNS). Both cells are neighbour cells. Cell A has a higher RF power level than Cell B such that an UE shall find Cell A more suitable for service.

UE: It is in Idle mode and has selected cell A with valid SRNS (Source SRNS). Usage of "PDCP Data" PDU, "PDCP SeqNum" PDU and no IP header compression is configured.

Related ICS/IXIT Statement(s)

Support of lossless SRNS relocation - YES/NO

Support of RLC in-sequence delivery - YES/NO

Test procedure

a) The SS setups a packet switched session including Radio Bearer and UE test loop mode 1 in RLC AM and in-sequence delivery using Common test procedures for mobile terminated PS switched sessions in Cell A. The RLC buffer discharge mode shall be set to "no discard". Usage of "PDCP Data" PDU and "PDCP SeqNum"

PDU, support of lossless SRNS relocation and no IP header compression has been configured by higher layers. The PDCP SN window size has been negotiated by RRC.

b) The SS sends a TCP/IP data packet (no compression packet type), PID=0.

c) After having received the TCP/IP data packet, the PDCP entity of the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE via its PDCP configuration.

d) The SS receives and decodes the TCP/IP data packet according to the inserted PID. The decoded data packet shall be identical with the data as sent before.

e) The SS reconfigures (using RRC Radio Bearer Reconfiguration message) the PDCP entity by extending the PID value allocation table and therefore the applied optimisation method with the IP header compression protocol RFC 2507. The UE test loop mode 1 in RLC AM is still active.

f) The SS sends the next TCP/IP data packet (no compression packet type), PID=0 using the "PDCP SeqNum" PDU including the current PDCP Sequence Number value to the UE.

g) After having received the TCP/IP data packet, the UE shall recognize the PID value and shall handle the received data packet correctly. Afterwards it forwards the data to its Radio Bearer Loop Back entity. The received data shall be returned by the UE by using PDCP "SeqNum" PDU including its DL_Receive PDCP SN via its PDCP configuration.

h) The SS receives and decodes TCP/IP data packets according to the inserted PID. The decoded data packets shall be identical with the data as sent before.

i) The SS deactivates the UE test loop mode and terminates the connection.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
Setup a UE terminated PS session using IP Header compression in AM RLC (using UE test loop mode 1) in Cell A				
1	←		PDCP Data	The SS creates a TCP/IP packet without IP header compression. The DL_Send PDCP SN is set to "0". The SS sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content to the UE: PDU type = 000 (PDCP Data PDU) PID = 0 (uncompressed IP header) data: below described TCP/IP packet Afterwards the SS increments its counter value DL_Send PDCP SN by "1". After having received the PDCP Data PDU, the UE decodes the PDU and recognizes PID value = 0 (no IP header compression) Therefore, no IP header decompression shall be applied for this packet. The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
2	→		PDCP Data	The UE sends a PDCP Data PDU using the RLC-AM-Data-Request Primitive with the following content back to the SS: PDU type = 000 (PDCP Data PDU) PID value = 0 data: previously received TCP/IP packet After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
3	←		RRC RADIO BEARER RECONFIGURATION	SS extends the "PID value allocation table" with IP header compression PID (RFC 2507) in the UE.
4	→		RRC RADIO BEARER RECONFIGURATION COMPLETE	UE acknowledges its new settings

Step	Direction UE | SS	Message	Comments
5	←	PDCP SeqNum	The SS sends a PDCP SeqNum PDU including its current Sequence Number with the following content to the UE: PDU type = 001 (PDCP SeqNum PDU) PID = 0 (normal packet type [TCP/IP]) SeqNum = current PDCP Sequence Number data: below described TCP/IP packet Afterwards the SS increments its counter value DL_Send PDCP SN by "1". After having received the PDCP SeqNum PDU, the UE shall set the received PDCP Sequence Number as its own valid value. It decodes the PDU, recognizes PID value = 0 applied for this TCP/IP data packet and shall decompress it with the appropriate method. The UE shall set the value of DL_Receive PDCP SN to the value as received from SS The data packet is forwarded via PDCP-SAP to its Radio Bearer Loop Back (RB LB) entity. The SN synchronisation shall be considered as successfully performed after acknowledgement of SeqNum PDU transmission by lower layer in the SS. The RB LB entity in UE test loop mode 1 returns the received data packet and sends it back to its PDCP entity.
6	→	PDCP PDU	The UE sends a PDCP PDU with PDCP Header back to the SS. The content is as follows: PDU type = 000 (PDCP Data PDU) PID value = 0 to 3 SeqNum: current UE value, (optional parameter, depending on ~~the used~~ PDU used) data: previously received TCP/IP packet. After reception of this TCP/IP data packet, the SS applies the appropriate decoding function depending on the assigned PID.
Deactivate a UE terminated PS session using IP Header compression (using UE test loop mode 1)			

Specific Message Contents

RRC RADIO BEARER RECONFIGURATION message

The contents of the RRC RADIO BEARER RECONFIGURATION message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	1
RB information to reconfigure	
- PDCP info	
- Max PDCP SN window size	65535
- Support of lossless SRNS relocation	TRUE
- PDCP PDU header	present
- Header compression information	1
CHOICE *algorithm type*	
- RFC2507	
- F_MAX_PERIOD	256 (Default)
- F_MAX_TIME	5 (Default)
- MAX_HEADER	168 (Default)
- TCP_SPACE	15 (Default)
- NON_TCP_SPACE	15 (Default)
- EXPECT_REORDERING	reordering not expected (Default)
<u>Receive PDCP sequence number</u>	<u>IE is set to the value to be counted inside SS as next expected reception Sequence Number</u>
<u>U-RNTI</u>	<u>New value of U-RNTI different from the previous U-RNTI</u>

RRC CONNECTION SETUP message

The contents of the RRC CONNECTION SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) with the following exceptions:

Information Element	Value/remark
Capability update requirement	
- UE radio access capability update requirement	TRUE
	NOTE: Value will be checked. Stated capability must be compatible with 34.123-2 (c.f. PICS/PIXIT statements in GSM) and the user settings

RADIO BEARER SETUP message

The contents of the RADIO BEARER SETUP message applied in the preamble "Setup a UE terminated PS session using IP Header compression in AM RLC" of this test case is identical to those of the default contents of layer 3 messages for RRC tests [TS 34.123-1] (PS connection for AM) which fit to the here described parameters with the following exceptions:

Information Element	Value/remark
- Downlink counter syncronisation info	
- RB with PDCP information list	
- RB identity	20
- PDCP SN info	1 (Note: next expected Sequence Number)
- RAB information for setup	
- RAB info	
- RAB identity	No. # 23 as described in TS 34.108, Table 6.10.2.1.1 Prioritised RABs. QoS parameter: Traffic Class: Interactive or Background, max. UL: 64 kbps and max. DL: 64 kbps as described in TS 34.108, including described physical channel parameters, configuration for AM RLC Residual BER as described in TS 24.108, clause: 6.10 Related Signalling RB UL: 3.4 kbps, DL: 3.4 kbps DCCH, No. #2 (as described in TS 34.108)
- CN domain identity	PS domain
- RB information to setup	
- RB identity	20
- PDCP info	
- Max PDCP SN window size	65535
- Support of lossless SRNS relocation	TRUE
- PDCP PDU header	present
- RLC info	
- Downlink RLC mode	(AM RLC)
- In-sequence delivery	True
- Uplink RLC mode	(AM RLC)
- Transmission RLC Discard	No Discard Note: Default value defined in TS 34.108, Annex B

Content of PDCP Data PDU (Step 1)

Information Element	Value/remark
PDU type	000
PID	00000 (No header compression, PID = 0)
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

Content of PDCP SeqNum PDU (Step 5)

Information Element	Value/remark
PDU type	001
PID	00000 (No header compression, PID = 0)
Sequence number	(16 Bit value) valid Sequence Number of the SS
Data	PDCP test data type #1: TCP/IP data packet without IP header compression with any data content. The data shall be limited to 1500 bytes.

7.3.3.2.5   Test requirements

After having received the TCP/IP data packet conveyed with the "PDCP SeqNum" PDU, the UE shall return the TCP/IP data packets as indication, that the UE is able to handle a Sequence Number synchronisation.

7.3.3.3   PDCP Sequence Numbering and Data Forwarding - Reception of reserved
               PDU typeVoid

FFS

7.3.3.4   PDCP Sequence Number synchronization – Reception of invalid next
               expected receive Sequence Number

FFS

7.3.4 PDCP configuration testing

7.3.4.1   PDCP configuration behaviour while RRC Radio bearer setup procedure
               Void

FFS

7.3.4.2   PDCP configuration behaviour while RRC Radio bearer release procedure
               Void

FFS

7.3.4.3   PDCP configuration behaviour while RRC Cell Update procedureVoid

FFS

7.3.4.4   PDCP configuration behaviour for an invalid RRC configuration Void

FFS

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1 CR 194** | ⌘ | 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction to RLC conformance test 7.2.3.28	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 20th May 2002
Category: ⌘ **F**		***Release:*** ⌘ Rel-4

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

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

Reason for change: ⌘	Incorrect value for Poll PDU. Too much data sent in DL. Not enough data returned in UL.
Summary of change: ⌘	Reduced value of Poll_PDU from 84 to 4. Reduced amount of data sent so it's easier to code. Increased size of UL PDU in loopback so enough data is sent to satify expected sequence. Updated conformance requirements and references inline with TS25.322, v.3.10.0 (R1999).
Consequences if not approved: ⌘	Test case incorrectly specified.

Clauses affected: ⌘	7.2.3.28
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/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.

7.2.3.28 Status reporting / Abnormal conditions / Reception of LIST SUFI with Length set to zero

7.2.3.28.1 Definition

Peer RLCs use STATUS PDUs to manage flow control and retransmission. On a STATUS report PDU with an invalid LIST SUFI the RLC must behave as specified. Incorrect behaviour may result in degradation of QoS, or failure of the UE to communicate.

7.2.3.28.2 Conformance requirement

The List super-field

The List Super-Field consists of a type identifier field (LIST), a list length field (LENGTH) and a list of LENGTH number of pairs as shown in figure 9.11 below:

Type = **LIST**
LENGTH
SN_1
L_1
SN_2
L_2
…
SN_{LENGTH}
L_{LENGTH}

Figure 9.11: The List fields in a STATUS PDU

LENGTH

Length: 4 bits~~The LENGTH field of the LIST SUFI is defined as:~~

The number of (SN_i, L_i)-pairs in the super-field of type LIST. The value "0000" is invalid and the list is discarded.

Reference

TS 25.322 clause 9.2.2.11.4.

7.2.3.28.3 Test purpose

To verify that if a STATUS PDU is received with a LIST SUFI and the LENGTH field is set to "0000" that the list is discarded.

7.2.3.28.4 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	~~8~~4

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 (2-3 * Poll_PDU * AM_7_PayloadSize) – 1 bytes.

Test procedure

a) The SS sends an SDU of size (2 * Poll_PDU * AM_7_PayloadSize) – 1.

b) The SS monitors the received (looped back) PDUs for a poll request.

c) The SS responds to the poll request by transmitting a STATUS PDU with a LIST SUFI. The list contains an indication that two PDUs were not received, but has the length field set to "0000".

d) The SS continues to monitor the received PDUs to verify that none are retransmitted.

e) The SS may optionally release the radio bearer.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		←	DOWNLINK RLC PDU	SDU 1 (start)
2		←	…	SS continues to transmit RLC PDUs
3		←	DOWNLINK RLC PDU	SDU 1 (end)
4	→		UPLINK RLC PDU	SDU 1 (start)
5	→		UPLINK RLC PDU	
6	→		…	SS continues to receive RLC PDUs
7	→		UPLINK RLC PDU	SN = Poll_PDU - 1, Poll
8		←	STATUS PDU	LIST(LENGTH = "0000", SN = 1, SN = 2)
9	→		…	SS continues to receive RLC PDUs
10	→		UPLINK RLC PDU	Poll
11		←	STATUS PDU	Normal reply
12	→		…	SS continues to receive RLC PDUs
13	→		UPLINK RLC PDU	SDU 1 (end)
14	→		RB RELEASE	Optional step
NOTE:	The UPLINK and DOWNLINK PDU flows may overlap, but are shown separate for clarity.			

7.2.3.28.5   Test requirements

No RLC PDUs should be retransmitted by the UE.

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

Tdoc T1-020322

3GPP TSG- T1/SIG Meeting #23
Lund, Sweden, 21-23 May 2002

Tdoc T1S-020198r3

CR-Form-v5.1

CHANGE REQUEST

⌘	**34.123-1 CR 197**	⌘**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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Clarification of messages sequences in MM test cases 9.4.1.	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-05-07
Category: ⌘ **F**		***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	Some missing information in the message sequences of chapter 9

The phrase "the SS waits for the disconnection of the main signalling link" does not apply for UMTS. Instead the SS waits for RRC CONNECTION RELEASE COMPLETE as confirmation which is already part of the sequences.

The value of the IE "Initial UE identity" and the IE "Establishment cause" can not be tested in RRC test cases as the value is selected by NAS depending on the NAS procedures. Therefore they should be part of the NAS test cases. |
| ***Summary of change:*** ⌘ | Clarifications in messages sequences of chapters 9.4.1.

Clarification on which values on information elements that are used where the content of the default messages do not apply. Values on the IE "Establishment cause" and "Initial UE identity" in the RRC CONNECTION REQUEST message are added as test requirement.

The phrase "the SS waits for the disconnection of the main signalling link" is removed.

The RRC Security mode control procedure has been added where necessary.

Step 9a have been added to make SS wait for 5 seconds to secure that UE is in service. |

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" and "Initial UE identity" in the RRC CONNECTION REQUEST message dependent on MM will not be tested. |

Clauses affected:	⌘	9.4.1.4, 9.4.1.5

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.

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

9.4 Location updating

This procedure is used to register the UE in the network. If it is not performed correctly, no call can be established.

9.4.1 Location updating / accepted

9.4.1.1 Definition

9.4.1.2 Conformance requirement

1.

    1.1 if the network accepts a location updating from the UE and reallocates a TMSI in the LOCATION UPDATING ACCEPT message the UE shall acknowledge the reception of the new TMSI;

    1.2 the UE shall answer to paging with this TMSI and include it in a PAGING RESPONSE message.

2   If the network accepts a location updating from the UE and the LOCATION UPDATING ACCEPT message contains neither TMSI nor IMSI, the UE shall answer to paging when addressed with the last allocated TMSI and include it in the PAGING RESPONSE message.

3.

    3.1 if the network accepts a location updating from the UE by use of a LOCATION UPDATING ACCEPT message containing the IMSI of the UE, the UE shall not answer paging with the last allocated TMSI;

    3.2 the UE shall still answer paging with IMSI.

Reference(s)

TS 24.008 clause 4.4.4.6.

9.4.1.3 Test purpose

  1) To test the behaviour of the UE if the network accepts the location updating of the UE.

For the network response three different cases are identified:

    1.1)   TMSI is allocated;

    1.2)   location updating accept contains neither TMSI nor IMSI;

    1.3)   location updating accept contains IMSI.

9.4.1.4 Method of test

Initial conditions:

- System Simulator:

  - two cells, A and B, belonging to different location areas with location area identification a and b of the same PLMN;

  - IMSI attach/detach is allowed in both cells;

  - the T3212 time-out value is 1/10 hour in both cells.

- User Equipment:

  - the UE has a valid TMSI (=TMSI1) and CKSN (=CKSN1). It is "idle updated" on cell A.

Related ICS/IXIT statement(s)

None.

Test Procedure

The UE is made to select cell B. A normal location updating with TMSI reallocation is performed in cell B. The RRC CONNECTION is released. The SS checks, by paging, that the UE has stored the newly allocated TMSI. The RRC CONNECTION is released. The UE is made to select cell A. A normal location updating is performed in cell A. The LOCATION UPDATING ACCEPT message contains neither IMSI nor TMSI. The SS checks, by paging, that the UE has kept the old TMSI. The RRC CONNECTION is released. The UE is made to select cell B. A normal location updating is performed in cell B. The LOCATION UPDATING ACCEPT message contains an IMSI. The SS checks, by paging, that the UE has deleted its TMSI and responds to paging with IMSI.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
2	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. "Initial UE identity" IE contains the TMSI (=TMSI1) and LAI (=a)
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI1. The MM message is included in the RRC messagge INITIAL DIRECT TRANSFER with the CN domain identity set to CS domain.
5a	←		SECURITY MODE COMMAND	
5b	→		SECURITY MODE COMPLETE	
6	←		LOCATION UPDATING ACCEPT	"Mobile identity" = new TMSI (=TMSI2), LAI = b.
7	→		TMSI REALLOCATION COMPLETE	
8	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.~~
9	→		RRC CONNECTION RELEASE COMPLETE	
9a				SS waits 5 seconds to guarantee that the UE is in service.
10	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the new TMSI (= TMSI2) and the new LAI (=b). Establishment Cause: Terminating Conversational Call.
11	→		PAGING RESPONSE	"Mobile identity" IE contains the new TMSI (= TMSI2).
12	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link.~~
13	→		RRC CONNECTION RELEASE COMPLETE	
14		SS		Set the cell type of cell A to the "Serving cell". Set the cell type of cell B to the "non-suitable cell". (see note)
15	→		RRC CONNECTION REQUEST	"Establishment cause": Registration. "Initial UE identity" IE contains the TMSI (=TMSI2) and LAI (=b)
16	←		RRC CONNECTION SETUP	
17	→		RRC CONNECTION SETUP COMPLETE	
18a	→		LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = b, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2.

Step	Direction		Message	Comments
	UE	SS		
18b	←		SECURITY MODE COMMAND	
18c		→	SECURITY MODE COMPLETE	
19	←		LOCATION UPDATING ACCEPT	"Mobile identity" IE not included. LAI = a
20	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.~~
21		→	RRC CONNECTION RELEASE COMPLETE	The SS waits an amount of time which is enough to guarantee that the UE is in service.
22	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.12.2 "Initial UE identity" IE contains the TMSI (= TMSI2) and LAI (=a). Establishment Cause: Terminating Conversational Call.
23		→	PAGING RESPONSE	"Mobile identity" IE contains the TMSI (=TMSI2).
24	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link.~~
25		→	RRC CONNECTION RELEASE COMPLETE	
26		SS		Set the cell type of cell B to the "Serving cell". Set the cell type of cell A to the "non-suitable cell". (see note)
27		→	RRC CONNECTION REQUEST	"Establishment cause": Registration. "Initial UE identity" IE contains the TMSI (=TMSI2) and LAI (=a)
28	←		RRC CONNECTION SETUP	
29		→	RRC CONNECTION SETUP COMPLETE	
30a		→	LOCATION UPDATING REQUEST	"location updating type" = normal, "CKSN" = CKSN1, "location area identification" = a, "mobile station classmark 1" as given by the ICS and "mobile identity" = TMSI2.
30b	←		SECURITY MODE COMMAND	
30c		→	SECURITY MODE COMPLETE	
31	←		LOCATION UPDATING ACCEPT	"Mobile identity" IE contains IMSI and LAI (=b).
32	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link. The SS waits an amount of time which is enough to guarantee that the UE is in service.~~
33		→	RRC CONNECTION RELEASE COMPLETE	The SS waits an amount of time which is enough to guarantee that the UE is in service.
34	←		PAGING TYPE 1	"UE identity" IE contains the old TMSI (= TMSI2). Paging Cause: Terminating Conversational Call.
35		UE		The UE shall ignore this message. This is checked during 5 s.
36	←		Mobile terminated establishment of Radio Resource Connection	See TS 34.108 clause 7.1.2 "Initial UE identity" IE contains the IMSI. Establishment Cause: Terminating Conversational Call.
37		→	PAGING RESPONSE	"Mobile identity" IE contains the IMSI.
38	←		RRC CONNECTION RELEASE	~~After the sending of this message, the SS waits for the disconnection of the main signalling link.~~
39		→	RRC CONNECTION RELEASE COMPLETE	
NOTE:			The definitions for "Serving cell" and "non-suitable cell" are specified in TS 34.108 clause 6.1 "Reference Radio Conditions for signalling test cases only".	

Specific message contents

None.

9.4.1.5   Test requirement

At steps 2, 10, 15, 22, 27 and 36 the UE shall transmit an RRC CONNECTION REQUEST message with the IE "Establishment cause" and the IE "Initial UE identity" set as specified in the above Expected Sequence.

At step 7 the UE shall acknowledge the reception of the new TMSI (TMSI2).

At step 11 the UE shall answer to paging with this TMSI (TMSI2).

At step 23 the UE shall answer to paging with the last allocated TMSI (TMSI2).

At step 35 the UE shall not answer paging with the last allocated TMSI, but at step 37 the UE shall still answer paging with IMSI.

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

Tdoc T1-020324

3GPP TSG-T1 SIG Meeting #23
Lund, Sweden, 20th – 22nd May 2002

Tdoc T1S-020248r1

CR-Form-v5

CHANGE REQUEST

⌘ **34.123-1 CR 199** ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Update to CC test cases	
Source: ⌘	Nokia, Samsung	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-05-20

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: ⌘	Test case review

Summary of change: ⌘
1. Editorial changes and corrections.
2. Table 10.1.2/1 IE name corrected.
3. Clause 10.1.2.3.2.2 non-existent reference deleted.
4. Clause 10.1.2.3.3.4 in Expected sequence time values corrected according to timer tolerance +/- 10% specified in 34.108.
5. Clause 10.1.2.3.7.3 unnecessary text deleted.
6. Clause 10.1.2.4.3.4 "cause" changed to "Progress Indicator, Progress description", progress description values specified as "Unspecific" in 24.008 deleted.
7. Clause 10.1.2.4.4.4 "cause" changed to "Progress Indicator, Progress description", progress description values #(6-20) deleted.
8. Clause 10.1.2.4.4.5 step numbers corrected.
9. Clause 10.1.2.4.5.4 "cause" changed to "Progress Indicator, Progress description".
10. Clause 10.1.2.4.10.4 reference to timer tolerances in 34.108 added.
11. Clauses 10.1.2.3.2.2, 10.1.2.4.7.2, 10.1.2.5.5.2, 10.1.2.6.2.2, 10.1.2.6.5.2, 10.1.2.7.2.2, 10.1.2.8.2.2, 10.1.2.9.2.2, 10.1.2.9.3.2, 10.1.2.9.4.2, 10.1.3.1.1.2, 10.1.3.2.1.2, 10.1.3.3.5.2, 10.1.3.4.4.2, 10.1.3.4.8.2 and 10.1.3.5.6.2 reference to 24.008 clause 8.3.1 added.
12. Clause 10.1.2.5.8.5 CC state corrected.
13. Clause 10.1.2.6.6.4 IE name corrected.
14. Clause 10.1.2.7.3.4 reference to timer tolerances in 34.108 added.
15. Clause 10.1.2.9.1.4 reference to timer tolerances in 34.108 added.
16. Clause 10.1.2.9.2.4 step PAGING RESPONSE added.
17. Clause 10.1.3.2.1.5 step number corrected.
18. Clause 10.2.1.4 unnecessary text deleted.

		19. Comment from Samsung: The directions of arrows in steps 13 and 14 in Table 10.1.2/3 are incorrect. SS should send the CONNECT message and UE should respond with CONNECT ACKNOWLEDGE.
Consequences if not approved:	⌘	Incorrect test cases

Clauses affected:	⌘	10.1.*, 10.2.1.4
Other specs affected:	⌘ ☐ ☐ ☐	Other core specifications ⌘ Test specifications O&M Specifications
Other comments:	⌘	Review was based on 24.008 V3.11.0 (2002-03). Affects R99 and Rel-4

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10 Circuit Switched Call Control (CC)

10.1 Circuit switched Call Control (CC) state machine verification

10.1.1 General on CC state machine verification

The principle of checking the call control functions consists in the validation of each call control identified state.

State U0 as an initial state is not verified in the tests of 10.1.2 (establishment of an outgoing call).

State U0.1 is never verified.

The steps to be followed within each performed test are:

- bring the UE into the required state;

- trigger the tested event;

- check the UE response and new state.

In clauses 10.1.2 and 10.1.3 different tables are defined to bring the UE into the required initial state. The exact table to be chosen is specified individually in clause "Initial conditions" of "Method of test" for each test case.

For each test, unless otherwise specified, a circuit switched basic service among those supported by the UE but excluding the emergency call teleservice shall be chosen arbitrarily, and the test shall be performed according to that basic service. If the only circuit switched basic service supported by the mobile is emergency call, then the incoming call tests shall not be performed and the other call control tests shall be performed with the EMERGENCY SETUP message replacing the SETUP message.

The initial states are to be checked through STATUS ENQUIRY messages sent by the SS, when feasible. This is not explicitly stated in the tables of expected sequences of signalling messages. The checking of final states are explicitly included into the expected sequences of signalling messages.

The following postamble may be used by the SS to bring UE back to idle mode in those test cases, in which it is not already included into expected sequence of signalling messages:

Table 10.1.1/1: A postamble to bring the UE back to idle mode.

Step	Direction		Message	Comments
	UE	**SS**		
N	<--		RRC CONNECTION RELEASE	
n+1	-->		RRC CONNECTION RELEASE COMPLETE	
n+2	UE			the UE shall release the main signalling link

The postamble has not been included into the all of the tests in order to leave an option to concatenate the procedures in the future by using a final state of a test case as an initial state to another one.

For the special case of U0, the state is checked by sending STATUS ENQUIRY message with all possible values of transaction identifier (seven values) as U0 is the only state in which for every TI the UE will answer with release complete with cause #81. If U0 is to be verified when no RRC connection exists, first a mobile terminating radio connection must be established.

The UE responses are either call management messages received by the SS or lower layers functions activated within the UE or MMI actions (e.g. the buzzing of an alerting tone).

A time-out within the UE is triggered by the SS when it does not answer back an UE expected response.

The test sequences may be split in 3 main groups:

- establishment and release of an outgoing call;

- establishment and release of an incoming call;

- in-call functions.

Some test cases use Basic Generic Procedures, "Mobile terminated establishment of Radio Resource Connection" and "Radio Bearer Setup Procedure" defined in TS34.108 clause 7.

General tolerance value on protocol timers defined in TS34.108 is used in some test cases if no specific tolerance on timer is defined in a test case.

Remark on verification of transient states

Some call control states of the user equipment may be transient, depending on implementation, configuration of the UE and previous messages.

If a test starts in a transient state, then the test is executed without verification of the starting state.

10.1.2   Establishment of an outgoing call

Initial conditions

As a minimum requirement the UE is updated and has been given a TMSI, a ciphering key and cipher key sequence number, and the layer 2, RRC and MM functionalities have been verified.

There are as many CM initial conditions as states to be checked.

The tables below describe message exchanges which bring the UE in the requested initial states.

A state may be taken as initial only when all the states which lead to this initial states have been validated. The order followed in the test procedure will be U0, U0.1, U1, U3, U4, U10, U12, U19, U11 as seen in the table underneath.

The UE is brought again in the initial state starting with U0 at each new test performed.

Table 10.1.2/1: Establishment of an outgoing call, procedure 1 (late assignment)

Step	Direction		Message	Comments
	UE	SS		
1	->		RRC CONNECTION REQUEST	Initiate outgoing call
2	<-		RRC CONNECTION SETUP	
3	->		RRC CONNECTION SETUP COMPLETE	
4	->		CM SERVICE REQUEST	U0.1
5	<-		AUTHENTICATION REQUEST	
6	->		AUTHENTICATION RESPONSE	
7	<-		SECURITY MODE COMMAND	
8	->		SECURITY MODE COMPLETE	
9	->		SETUP	U1
10	<-		CALL PROCEEDING	U3
11	<-		ALERTING	U4
12			Radio Bearer Setup Procedure	DTCH, See TS 34.108
13	<-		CONNECT	
14	->		CONNECT ACKNOWLEDGE	U10
A15	<-		DISCONNECT	U12 (note 1)
B15	<-		DISCONNECT	U12 (note 2)
B16	->		RELEASE	U19
C15				MMI action, terminate call
C16	->		DISCONNECT	U11
NOTE 1: The Progress Indicator IE with progress description #8 "in band information or appropriate pattern now available" is included.				
NOTE 2: The Progress Indicator Indication IE is not included.				

Table 10.1.2/2: Void

Table 10.1.2/3: Establishment of an outgoing call, procedure 3

Step	Direction		Message	Comments
	UE	SS		
1	->		RRC CONNECTION REQUEST	Initiate outgoing call
2	<-		RRC CONNECTION SETUP	
3	->		RRC CONNECTION SETUP COMPLETE	
4	->		CM SERVICE REQUEST	U0.1
5	<-		SECURITY MODE COMMAND	
6	->		SECURITY MODE COMPLETE	
7	->		SETUP	U1
8	<-		AUTHENTICATION REQUEST	
9	->		AUTHENTICATION RESPONSE	
10	<-		CALL PROCEEDING	U3
11			Radio Bearer Setup Procedure	DTCH, See TS 34.108
12	<-		ALERTING	U4
13	<->		CONNECT	
14	<->		CONNECT ACKNOWLEDGE	U10
A15	<-		DISCONNECT	U12 (note 1)
B15	<-		DISCONNECT	U12 (note 2)
B16	->		RELEASE	U19
C15				MMI action, terminate call
C16	->		DISCONNECT	U11
NOTE 1: The Progress Indicator IE with progress description #8 "in band information or appropriate pattern now available" is included.				
NOTE 2: The Progress indicator IE is not included.				

Table 10.1.2/4: Establishment of an outgoing call, procedure 4

Step	Direction		Message	Comments
	UE	SS		
1	->		RRC CONNECTION REQUEST	Initiate outgoing call
2	<-		RRC CONNECTION SETUP	
3	->		RRC CONNECTION SETUP COMPLETE	
4	->		CM SERVICE REQUEST	U0.1
5	<-		IDENTITY REQUEST	
6	->		IDENTITY RESPONSE	
7	<-		SECURITY MODE COMMAND	
8	->		SECURITY MODE COMPLETE	
9	->		SETUP	U1
10	<-		Radio Bearer Setup Procedure	DTCH (note 1), See TS34.108
11	<-		CALL PROCEEDING	U3
12	<-		ALERTING	U4
13	<-		CONNECT	
14	->		CONNECT ACKNOWLEDGE	U10
A15	<-		DISCONNECT	U12 (note 2)
B15	<-		DISCONNECT	U12 (note 3)
B16	->		RELEASE	U19
C15				MMI action, terminate call
C16	->		DISCONNECT	U11
NOTE 1: Assigned channel is appropriate for the chosen bearer capability (see 10.1).				
NOTE 2: The Progress Indicator IE with progress description #8 "in band information or appropriate pattern now available" is included.				
NOTE 3: The Progress Indicator IE is not included.				

10.1.2.1 Outgoing call / U0 null state

10.1.2.1.1 Outgoing call / U0 null state / MM connection requested

10.1.2.1.1.1 Definition

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

10.1.2.1.1.2 Conformance requirement

1) Upon initiation of an outgoing basic call by user the UE shall initiate establishment of an MM connection, using as first MM message a CM SERVICE REQUEST message with CM service type "Mobile originating call establishment or packet mode connection establishment".

References

TS 24.008 clause 5.2.1.1 and clause 4.5.1.1, TS 25.331 clause 8.1.3.

10.1.2.1.1.3 Test purpose

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

10.1.2.1.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Test procedure

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

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	->		RRC CONNECTION REQUEST	initiate outgoing call
2	<-		RRC CONNECTION SETUP	
3	->		RRC CONNECTION SETUP COMPLETE	
4	->		CM SERVICE REQUEST	verify the type of call which is asked for "basic" or "emergency" by the UE
5	<-		RRC CONNECTION RELEASE	
6	->		RRC CONNECTION RELEASE COMPLETE	
7	UE			the UE shall release the main signalling link

Specific message contents:

None.

10.1.2.1.1.5 Test requirements

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

10.1.2.2 Outgoing call / U0.1 MM connection pending

10.1.2.2.1 Outgoing call / U0.1 MM connection pending / CM service rejected

10.1.2.2.1.1 Definition

A request for MM connection is rejected by the SS.

10.1.2.2.1.2 Conformance requirement

Upon receiving indication of an MM-connection establishment being rejected, CC entity should inform upper layer of this rejection.

References

TS 24.008, clause 4.5.1.1, TS 24.007, clause 6.2.2.

10.1.2.2.1.3 Test purpose

To verify that a CC entity of the UE in CC-state U0.1, "MM-connection pending", upon the UE receiving a CM SERVICE REJECT message, returns to CC state U0, "Null".

10.1.2.2.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U0.1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. When the SS receives CM SERVICE REQUEST, the contents of it shall be checked. The SS rejects it by CM SERVICE REJECT. Then the SS will check the state of the UE by using STATUS ENQUIRY with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	<-		CM SERVICE REJECT	
2	<-		STATUS ENQUIRY	
3	->		RELEASE COMPLETE	cause shall be #81# (invalid TI value)
4		SS		repeat steps 2-3 to cover all the transaction identifiers from 000 ...110
5	<-		RRC CONNECTION RELEASE	
6	->		RRC CONNECTION RELEASE COMPLETE	
7		UE		the UE shall release the main signalling link

Specific message contents:

None.

10.1.2.2.1.5 Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.2.2 Outgoing call / U0.1 MM connection pending / CM service accepted

10.1.2.2.2.1 Definition

A CM request is accepted for the MM-connection by the SS.

10.1.2.2.2.2 Conformance requirement

A CC entity of the UE in CC-state U0.1, "MM-connection pending", upon the UE receiving a CM SERVICE ACCEPT message, shall send a SETUP message specifying the Called party BCD number that was entered into the UE and then enter CC state U1, "Call initiated".

References

TS 24.008, clause 4.5.1.1 and clause 5.2.1.1.

10.1.2.2.2.3 Test purpose

To verify that a CC entity of the UE in CC-state U0.1, "MM-connection pending", upon the UE receiving a CM SERVICE ACCEPT message, sends a SETUP message specifying the Called party BCD number that was entered into the UE and then enters CC state U1, "Call initiated".

10.1.2.2.2.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U0.1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. When the UE is requesting a MM-connection, the SS will indicate acceptance by sending a CM SERVICE ACCEPT message. The UE shall respond with SETUP. Then the SS will check the state of the call control entity by STATUS ENQUIRY with the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	CM SERVICE ACCEPT	
2	->		SETUP	with called party BCD number.
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause shall be #30# (response to enq.) and state U1 call initiated.

Specific message contents:

None.

10.1.2.2.5 Test requirements

After step 1 a CC entity of the UE in CC-state U0.1, "MM-connection pending", shall send a SETUP message specifying the Called party BCD number that was entered into the UE and then enter CC state U1, "Call initiated".

10.1.2.2.3 Outgoing call / U0.1 MM connection pending / lower layer failure

10.1.2.2.3.1 Definition

The call control entity of the UE being in the state, U0.1, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.2.3.2 Conformance requirement

1) Upon a lower layer failure the UE releases the MM connection in progress and returns to idle mode. In that state no call exists, and the CC entity is in state U0, "Null".

References

TS 24.008, clause 4.5.1.2, clause 5.2.1.1, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.2.3.3 Test purpose

To verify that after the UE with a CC entity in state U0.1, "MM-connection pending", has detected a lower layer failure and has returned to idle mode, the CC entity is in state U0, "Null".

10.1.2.2.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

    System Simulator:

        1 cell, default parameters.

    User Equipment:

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

        The UE is brought into the state U0.1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. When the UE has sent a CM SERVICE REQUEST message, the SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission(DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on DCCH

Specific message contents:

None.

10.1.2.2.3.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.3   Outgoing call / U1 call initiated

10.1.2.3.1   Outgoing call / U1 call initiated / receiving CALL PROCEEDING

10.1.2.3.1.1   Definition

The call control entity of the UE being in the state, U1, a CALL PROCEEDING message is sent by the SS.

10.1.2.3.1.2   Conformance requirement

1) A CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a CALL PROCEEDING message, shall enter CC state U3, "Mobile originating call proceeding".

References

    TS 24.008, clauses 5.2.1.1, 5.2.1.2 and 5.2.1.3.

10.1.2.3.1.3   Test purpose

To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a CALL PROCEEDING message, enters CC state U3, "Mobile originating call proceeding".

10.1.2.3.1.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

   System Simulator:

      1 cell, default parameters.

   User Equipment:

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

      The UE is brought into the state U1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. The SS sends a CALL PROCEEDING message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U3.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	CALL PROCEEDING	tone generation not mandatory
2		<-	STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U3

Specific message contents:

None.

10.1.2.3.1.5   Test requirements

After step 1 a CC entity of the UE in CC-state U1, "Call initiated", shall enter CC state U3, "Mobile originating call proceeding".

10.1.2.3.2   Outgoing call / U1 call initiated / rejecting with RELEASE COMPLETE

10.1.2.3.2.1   Definition

The call control entity of the UE being in the state, U1, the call is rejected by a RELEASE COMPLETE message sent by the SS.

10.1.2.3.2.2   Conformance requirement

1) A CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a RELEASE COMPLETE message with valid cause value, shall enter CC state U0, "Null".

2) On returning to idle mode, the CC entities relating to the seven mobile originating transaction identifiers shall be in state U0, "Null".

3) On releasing the MM-connection, the UE shall wait for MM layer release initiated by the network.

References

Conformance requirement 1: TS 24.008, clause 5.4.2 and clause 5.4.4.

Conformance requirement 2: TS 24.008, clause 5.5.3.2 and 8.3.1.

Conformance requirement 3: TS 24.008, clause 5.4.4.1.3, and clause 4.5.3 and clause 8.1.4.

10.1.2.3.2.3 Test purpose

1) To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a RELEASE COMPLETE message with valid cause value, enters CC state U0, "Null".

2) To verify that in returning to idle mode, the CC entities relating to the seven mobile originating transaction identifiers are in state U0, "Null".

3) To verify that in releasing the MM-connection, the UE shall wait for MM layer release initiated by SS.

10.1.2.3.2.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. The SS sends a RELEASE COMPLETE message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE COMPLETE	See specific message content below.
2	<-		STATUS ENQUIRY	
3	->		RELEASE COMPLETE	cause #81# (invalid TI value)
4	SS			repeat steps 2-3 to cover all the transaction identifiers from 000...110
5	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
6	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

RELEASE COMPLETE

1) With a valid cause value among:

related to numbering,

#1 unallocated number

#3 no route to destination

#22 number changed

#28 invalid number format

related to bearer capabilities,

#8 operator determined barring

#57 bearer capability not authorized

#58 bearer capability not presently available

#63 service or option not available

#65 bearer service not implemented

#34 no circuit/channel available (call queuing).

10.1.2.3.2.5 Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.3.3 Outgoing call / U1 call initiated / T303 expiry

10.1.2.3.3.1 Definition

The call control entity of the UE being in the state, U1, if no response is then received from the SS, timer T303 expires at the UE side.

10.1.2.3.3.2 Conformance requirement

1) A CC entity of the UE in CC-state U1, "Call initiated", upon expiry of T303 shall send a DISCONNECT message to its peer entity and enter state U11, "Disconnect request".

References

TS 24.008, clause 5.2.1.1 and clause 5.4.

10.1.2.3.3.3 Test purpose

1) To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon expiry of T303 sends a DISCONNECT message to its peer entity and enters state U11, "Disconnect request".

10.1.2.3.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. When T303 expires at the UE, the UE shall send DISCONNECT. The SS checks by using the status enquiry procedure that the CC entity has entered the state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS waits for T303 expiry.
2	->		DISCONNECT	Shall be transmitted between 24 27 s and 36 33 s after the CM SERVICE REQUEST.
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, status U11

Specific message contents:

None.

10.1.2.3.3.5 Test requirements

Upon expiry of timer T303, a CC entity of the UE in CC-state U1, "Call initiated", shall send a DISCONNECT message and enter state U11, "Disconnect request".

10.1.2.3.4 Outgoing call / U1 call initiated / lower layer failure

10.1.2.3.4.1 Definition

The call control entity of the UE being in the state, U1, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.3.4.2 Conformance requirement

Upon a lower layer failure MM informs the relevant CM entities that the MM connection has been interrupted. As call re-establishment is not allowed, the CC entity must perform a local release. The UE returns to idle mode. In that state no call exists, and the CC entity is in state U0, "Null".

References

TS 24.008, clause 4.5.2.3, clause 5.2.1.1 and clause 5.5.3.2, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.3.4.3 Test purpose

To verify that after the UE with a CC entity in state U1 "Call initiated", has detected a lower layer failure and has returned to idle mode, the CC entity is in state U0, "Null".

10.1.2.3.4.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U1 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U1. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on DCCH

Specific message contents:

None.

10.1.2.3.4.5 Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.3.5 Outgoing call / U1 call initiated / receiving ALERTING

10.1.2.3.5.1 Definition

The call control entity of the UE being in the state, U1, an ALERTING message is sent to the UE as an indication that a call is being alerted at a called end.

10.1.2.3.5.2 Conformance requirement

1) A CC entity of the UE in CC-state U1, "Call initiated", upon receipt of an ALERTING message, shall enter CC state U4, "Call delivered".

References

TS 24.008, clause 5.2.1.1.

10.1.2.3.5.3   Test purpose

To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon receipt of an ALERTING message, enters CC state U4, "Call delivered".

10.1.2.3.5.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U1 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. The SS sends an ALERTING message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U4, call delivered.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		<-	ALERTING	
2		<-	STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U4

Specific message contents:

None.

10.1.2.3.5.5   Test requirements

After step 1 a CC entity of the UE in CC-state U1, "Call initiated", shall enter CC state U4, "Call delivered".

10.1.2.3.6   Outgoing call / U1 call initiated / entering state U10

10.1.2.3.6.1   Definition

The call control entity of the UE being in the state, U1, a CONNECT message is received by the UE.

10.1.2.3.6.2   Conformance requirement

1)   A CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a CONNECT message, shall send a CONNECT ACKNOWLEDGE message to its peer entity and enter CC state U10, "Active".

References

>   TS 24.008, clause 5.2.1.1 and clause 5.2.1.6.

10.1.2.3.6.3   Test purpose

To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a CONNECT message, sends a CONNECT ACKNOWLEDGE message to its peer entity and enters CC state U10, "Active".

10.1.2.3.6.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

>   System Simulator:

>   1 cell, default parameters.

>   User Equipment:

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

>   The UE is brought into the state U1 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. The SS sends a CONNECT message to the UE. The UE shall respond by sending a CONNECT ACKNOWLEDGE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U10, active.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		CONNECT	
2	->		CONNECT ACKNOWLEDGE	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.2.3.6.5   Test requirements

After step 1 a CC entity of the UE in CC-state U1, "Call initiated", shall send a CONNECT ACKNOWLEDGE message and shall enter CC state U10, "Active".

10.1.2.3.7   Outgoing call / U1 call initiated / unknown message received

10.1.2.3.7.1   Definition

The call control entity of the UE being in the state, U1, an unknown message is received by the UE.

10.1.2.3.7.2 Conformance requirement

1) A CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a message with message type not defined for the protocol discriminator from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.2.3.7.3 Test purpose

To verify that a CC entity of the UE in CC-state U1, "Call initiated", upon receipt of a message with message type not defined for the protocol discriminator ~~unknown message~~ from its peer entity returns a STATUS message.

10.1.2.3.7.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U1 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U1. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U1
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U1

Specific message contents:

None.

10.1.2.3.7.5 Test requirements

After step 1 and step 3 a CC entity of the UE in CC-state U1, "Call initiated", shall return a STATUS message.

10.1.2.4 Outgoing call / U3 UE originating call proceeding

10.1.2.4.1 Outgoing call / U3 UE originating call proceeding / ALERTING received

10.1.2.4.1.1 Definition

The call control entity of the UE being in the state, U3, an ALERTING message is sent to the UE as an indication that a call is being alerted at a called end.

10.1.2.4.1.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of an ALERTING message shall enter CC-state U4, "Call Delivered".

References

TS 24.008 clause 5.2.1.5.

10.1.2.4.1.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a ALERTING message enters CC-state U4, "Call Delivered".

10.1.2.4.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends an ALERTING message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U4, call delivered.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	ALERTING	
2		<-	STATUS ENQUIRY	
3		->	STATUS	cause #30#, state U4

Specific message contents:

None.

10.1.2.4.1.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall enter CC-state U4, "Call Delivered".

10.1.2.4.2   Outgoing call / U3 UE originating call proceeding / CONNECT received

10.1.2.4.2.1   Definition

The call control entity of the UE being in the state, U3, a CONNECT message is received by the UE.

10.1.2.4.2.2   Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a CONNECT message shall return a "CONNECT ACKNOWLEDGE" message to its peer entity and enter the CC state U10, "Active".

2) The UE shall then stop any locally generated indication.

References

   Conformance requirement 1:   TS 24.008 clause 5.2.1.6.

   Conformance requirement 2:   TS 24.008 clause 5.2.1.6.

10.1.2.4.2.3   Test purpose

1) To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a CONNECT message returns a "CONNECT ACKNOWLEDGE" message to its peer entity and enters the CC state U10, "Active".

2) To verify that the UE stops locally generated indication, if any.

10.1.2.4.2.4   Method of test

Related ICS/IXIT statements

   -    supported MO circuit switched basic services.

Initial conditions

   System Simulator:

      1 cell, default parameters.

   User Equipment:

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

      The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS sends a CONNECT message to the UE. The UE shall respond by sending a CONNECT ACKNOWLEDGE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U10, active.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	(DTCH), SeeTS34.108
2		<-	CONNECT	the UE shall stop tone generation, if any
3		->	CONNECT ACKNOWLEDGE	
4		<-	STATUS ENQUIRY	
5		->	STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.2.4.2.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall return a "CONNECT ACKNOWLEDGE" message and enter the CC state U10, "Active".

The UE shall stop locally generated indication.

10.1.2.4.3 Outgoing call / U3 UE originating call proceeding / PROGRESS received without in band information

10.1.2.4.3.1 Definition

The call control entity of the UE being in the state, U3, a PROGRESS message is received by the UE. The PROGRESS message does not contain indication of in-band information availability.

10.1.2.4.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a PROGRESS message with valid cause values shall stay in CC-state U3.

2) After receipt of the PROGRESS message timer T310 shall be stopped.

References

   Conformance requirement 1:   TS 24.008 clause 5.2.1.4.

   Conformance requirement 2:   TS 24.008 clause 11.3.

10.1.2.4.3.3 Test purpose

1) To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a PROGRESS message with valid cause values stays in CC-state U3.

2) To verify that after receipt of the PROGRESS message timer T310 is stopped.

10.1.2.4.3.4 Method of test

Related ICS/IXIT statements

   - supported MO circuit switched basic services.

Initial conditions

   System Simulator:

      1 cell, default parameters.

3GPP

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a PROGRESS message not containing indication of in-band information availability to the UE. The SS checks that the UE has stopped T310, i.e. at T310 time-out no DISCONNECT message is sent by the UE. Then the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		PROGRESS	(note)
2	<-		STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U3
4	SS			SS waits at least 45 s and checks no DISCONNECT is sent by the UE
5	<-		STATUS ENQUIRY	
6	->		STATUS	cause #30#, state U3

NOTE: Tested with a valid Progress Indicator, Progress description cause value among:

- #4 call has returned to PLMN/ISDN;

- #32 call is end-to-end PLMN/ISDN; or

  any value in the set #(21-127).

Specific message contents:

None.

10.1.2.4.3.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall stay in CC-state U3.

After step 3 SS waits at least 45 s and checks no DISCONNECT is sent by the UE.

10.1.2.4.4 Outgoing call / U3 UE originating call proceeding / PROGRESS with in band information

10.1.2.4.4.1 Definition

The call control entity of the UE being in the state, U3, a PROGRESS message indicating availability of in band information is received by the UE.

10.1.2.4.4.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a PROGRESS message indicating in-band announcement shall through-connect the traffic channel for speech, if DTCH is in a speech mode. If DTCH is not in speech mode, the UE shall not through-connect the DTCH.

2) After receipt of the PROGRESS message, T310 shall be stopped.

References

TS 25.331 clause 8.2.1, TS 24.008 clause 5.2.1.4, clause 5.2.1.9, clause 5.5.1 and clause 11.3.

10.1.2.4.4.3 Test purpose

1) To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a PROGRESS message indicating in-band announcement through-connects the traffic channel for speech, if DTCH is in speech mode. If DTCH is not in a speech mode, the UE does not through-connect the DTCH.

2) To verify that after receipt of the PROGRESS message, T310 is stopped.

10.1.2.4.4.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS sends a PROGRESS message containing indication of in-band information availability to the UE. The SS checks that if channel mode is speech, the DTCH shall be through connected. If channel mode is not speech, the DTCH shall not be through connected. Also the SS checks that the UE has stopped T310, i.e. at T310 time-out no DISCONNECT message is sent by the UE. Then the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	(DTCH), See TS34.108
2		<-	PROGRESS	(note) the UE shall stop all the CC timers , if channel mode is speech, the DTCH shall be through connected. If channel mode is not speech, the DTCH shall not be through connected.
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U3
5	SS			SS waits at least 45 s and checks no DISCONNECT is sent by the UE.
6		<-	STATUS ENQUIRY	
7	->		STATUS	cause #30#, state U3
8	SS			If the channel mode is speech the SS will check that the user connection for speech is attached (both downlink and uplink).

Specific message contents:

> NOTE: Tested with a valid ~~Progress Indicator, Progress description~~ cause value among:
>
> - #1 call is not end to end PLMN/ISDN;
>
> - #2 destination address is non PLMN/ISDN;
>
> - #3 originating address is non PLMN/ISDN;
>
> - #8 in band information or appropriate pattern now available ~~or any value in the set #(6-20)~~.

10.1.2.4.4.5 Test requirements

After step 2 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall through-connect the traffic channel for speech, if DTCH is in a speech mode. If DTCH is not in speech mode, the UE shall not through-connect the DTCH.

After step ~~2~~ 4 the SS waits at least 45 s and checks no DISCONNECT is sent by the UE.

After step ~~5~~ 7 the SS checks that the user connection for speech is attached (both downlink and uplink), if the channel mode is speech.

10.1.2.4.5 Outgoing call / U3 UE originating call proceeding / DISCONNECT with in band tones

10.1.2.4.5.1 Definition

The call control entity of the UE being in the state, U3, a DISCONNECT message indicating availability of in band information is received by the UE.

10.1.2.4.5.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a DISCONNECT with progress indicator #8, shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

References

> TS 24.008 clause 5.2.1.4 and clause 5.4.4.

10.1.2.4.5.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a DISCONNECT with progress indicator #8 through-connects the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE sends a RELEASE message.

10.1.2.4.5.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

> System Simulator:
>
> > 1 cell, default parameters.
>
> User Equipment:
>
> > The UE is in MM-state "idle, updated" with valid TMSI and CKSN.

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS sends a DISCONNECT message containing indication of in-band information availability to the UE. The SS checks that if channel mode is speech, the DTCH shall be through connected and the UE enters state U12, disconnect indication. If channel mode is not speech, the DTCH shall not be through connected and the UE shall enter state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	(DTCH), See TS34.108
2		<-	DISCONNECT	(note)
A3		SS		DTCH in speech mode: the SS will check that the audio path for in band tones is attached.
A4		<-	STATUS ENQUIRY	
A5		->	STATUS	cause #30#, state U12
B3		->	RELEASE	DTCH is not in speech mode:
B4		<-	STATUS ENQUIRY	
B5		->	STATUS	cause #30#, state U19

Specific message contents:

NOTE: the Progress Indicator, Progress description~~cause~~ value:

- #8 in band information or appropriate pattern now available.

10.1.2.4.5.5 Test requirements

After step 2 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

10.1.2.4.6 Outgoing call / U3 UE originating call proceeding / DISCONNECT without in band tones

10.1.2.4.6.1 Definition

The call control entity of the UE being in the state, U3, a DISCONNECT message is received by the UE. The DISCONNECT message does not contain indication of in-band information availability.

10.1.2.4.6.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a DISCONNECT without progress indicator shall return a RELEASE message and enter the CC-state U19, "Release Request"

References

TS 24.008 clause 5.4.4.

10.1.2.4.6.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a DISCONNECT without progress indicator returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.2.4.6.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a DISCONNECT message not containing indication of in-band information availability to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	
2	->		RELEASE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.4.6.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall send a RELEASE message and enter the CC-state U19, "Release Request".

10.1.2.4.7 Outgoing call / U3 UE originating call proceeding / RELEASE received

10.1.2.4.7.1 Definition

The call control entity of the UE being in the state, U3, a RELEASE message is received by the UE.

10.1.2.4.7.2   Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a RELEASE will return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) The UE on returning to the idle mode shall release the MM-connection and the CC-entities relating to the seven mobile originating transaction identifiers shall be in CC-state U0, "Null".

3) On releasing the MM-connection, the UE shall wait for MM layer release initiated by the network.

References

Conformance requirement 1:   TS 24.008 clause 5.4.2 and clause 5.4.4.

Conformance requirement 2:   TS 24.008 clause 4.5.3, and clause 5.5.3.2 and 8.3.1.

Conformance requirement 3:   TS 24.008 clause 5.4.4.1.3 and clause 4.5.3, TS 25.331 clause 8.1.4.

10.1.2.4.7.3   Test purpose

1) To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon receipt of a RELEASE will return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile originating transaction identifiers are in CC-state U0, "Null".

3) To verify that in releasing the MM-connection, the UE shall wait for MM layer release initiated by SS.

10.1.2.4.7.4   Method of test

Related ICS/IXIT statements

-   supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a RELEASE message to the UE. The UE shall respond with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	<-		RELEASE	with cause "Normal, unspecified"
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.4.7.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall send a RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.4.8 Outgoing call / U3 UE originating call proceeding / termination requested by the user

10.1.2.4.8.1 Definition

The call control entity of the UE being in the state, U3, the user requests to terminate the call.

10.1.2.4.8.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

> TS 24.007 clause 6.2.2., TS 24.008 clause 5.4.3.

10.1.2.4.8.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.2.4.8.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator: 1 cell, default parameters.

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The user requests termination of the call. The UE shall send a DISCONNECT message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				MMI action, terminate call
2	->		DISCONNECT	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.2.4.8.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.2.4.9 Outgoing call / U3 UE originating call proceeding / traffic channel allocation

10.1.2.4.9.1 Definition

The call control entity of the UE being in the state, U3, a radio bearer establishment procedure is performed.

10.1.2.4.9.2 Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall stay in CC-state U3.

References

TS 25.331 clause 8.2.1, TS 24.008 clause 5.2.1.9.

10.1.2.4.9.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, stays in CC-state U3.

10.1.2.4.9.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	(DTCH), See TS34.108
2	<-		STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U3

Specific message contents:

None.

10.1.2.4.9.5   Test requirements

After step 1 the CC state U3, "Mobile Originating Call Proceeding", shall remain unchanged.

10.1.2.4.10   Outgoing call / U3 UE originating call proceeding / timer T310 time-out

10.1.2.4.10.1   Definition

The call control entity of the UE being in the state, U3, if no response is then received from the SS, timer T310 expires at the UE side.

10.1.2.4.10.2   Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" shall, upon expiry of timer T310, and not before, initiate call release by sending DISCONNECT and enter the CC-state U11, "Disconnect Request".

References

TS 24.008 clause 5.2.1.3./Abnormal case, clause 5.4.3 and clause 11.3.

10.1.2.4.10.3   Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" will, upon expiry of timer T310, initiate call release by sending DISCONNECT and enter the CC-state U11, "Disconnect Request".

10.1.2.4.10.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The T310 expires at the UE and the UE shall send DISCONNECT. The SS checks timer T310 accuracy and that the CC entity has entered the state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			the SS waits for T310 time-out
2	->		DISCONNECT	check the timer T310 accuracy, see TS34.108 clause 4.2.3
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.2.4.10.5 Test requirements

Upon expiry of timer T310, a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" shall initiate call release by sending a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.2.4.11 Outgoing call / U3 UE originating call proceeding / lower layer failure

10.1.2.4.11.1 Definition

The call control entity of the UE being in the state, U3, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.4.11.2 Conformance requirement

1) If a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" has detected a lower layer failure and has returned to idle mode, the CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3 and clause 5.5.3.2, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.4.11.3 Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" having detected a lower layer failure and having returned to idle mode, the CC entity is in state U0, "Null".

10.1.2.4.11.4   Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U3. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on DCCH

Specific message contents:

None.

10.1.2.4.11.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.4.12   Outgoing call / U3 UE originating call proceeding / unknown message received

10.1.2.4.12.1   Definition

The call control entity of the UE being in the state, U3, an unknown message is received by the UE.

10.1.2.4.12.2   Conformance requirement

1) A CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.5.

10.1.2.4.12.3   Test purpose

To verify that a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding" having received an unknown message from its peer entity returns a STATUS message.

10.1.2.4.12.4   Method of test

Related ICS/IXIT statements

-        supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U3. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U3
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U3

Specific message contents:

None.

10.1.2.4.12.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U3, "Mobile Originating Call Proceeding", shall return a STATUS message.

10.1.2.4.13   Outgoing call / U3 UE originating call proceeding / Internal alerting indication

10.1.2.4.13.1   Definition

The call control entity of the UE being in the state, U3, an ALERTING message is sent to the UE when the user connection is not attached to the radio path.

10.1.2.4.13.2 Conformance requirement

1) When the call control entity of the UE in the "mobile originating call proceeding" state receives an ALERTING message then it shall enter "call delivered" state and, for speech calls, if the user connection is not attached to the radio path, the UE shall internally generate an alerting indication.

References

TS 24.008 clause 5.2.1.5.

10.1.2.4.13.3 Test purpose

When the call control entity of the UE in the "mobile originating call proceeding" state receives an ALERTING message then it enters "call delivered" state and, for speech calls, if the user connection is not attached to the radio path, the UE generates internally an alerting indication.

10.1.2.4.13.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

- way to give internally generated alerting indication for outgoing calls.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U3 by using table 10.1.2/1.

Test procedure

The SS sends an ALERTING message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U4, call delivered. Also it is checked that the UE generates internally alerting indication to the user in the way described in the ICS/IXIT statements.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		ALERTING	the UE shall generate an alerting indication to the user in the way described in the ICS/IXIT statements
2	<-		STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U4

Specific message contents:

None.

10.1.2.4.13.5 Test requirements

After step 1 CC entity of the UE in CC state U3, the "Mobile Originating Call Proceeding" shall enter "Call Delivered" state and, for speech calls, if the user connection is not attached to the radio path, the UE shall internally generate an alerting indication.

10.1.2.5 Outgoing call / U4 call delivered

10.1.2.5.1 Outgoing call / U4 call delivered / CONNECT received

10.1.2.5.1.1 Definition

The call control entity of the UE being in the state, U4, a CONNECT message is received by the UE.

10.1.2.5.1.2 Conformance requirement

1) A CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of the CONNECT message shall return a CONNECT ACKNOWLEDGE to its peer entity and enter the CC-state U10, "Active".

References

    TS 24.008 clause 5.2.1.6.

10.1.2.5.1.3 Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of the CONNECT message returns a CONNECT ACKNOWLEDGE to its peer entity and enters the CC-state U10, "Active".

10.1.2.5.1.4 Method of test

Related ICS/IXIT statements

-   supported MO circuit switched basic services.

Initial conditions

    System Simulator:

        1 cell, default parameters.

    User Equipment:

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

        The UE is brought into the state U4 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a CONNECT message to the UE. The UE shall respond by sending a CONNECT ACKNOWLEDGE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U10, active.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	CONNECT	
2	->		CONNECT ACKNOWLEDGE	UE stops alerting, if applicable
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.2.5.1.5   Test requirements

After step 1 a CC entity of the UE in CC state U4, "Call Delivered", shall return a CONNECT ACKNOWLEDGE message and enter the CC state U10, "Active".

10.1.2.5.2   Outgoing call / U4 call delivered / termination requested by the user

10.1.2.5.2.1   Definition

The call control entity of the UE being in the state, U4, the user requests to terminate the call.

10.1.2.5.2.2   Conformance requirement

  1) A CC-entity of the UE in CC-state U4, "Call Delivered", upon request by the user to terminate shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

    TS 24.007 clause 6.2.2,TS 24.008 clause 5.4.3.

10.1.2.5.2.3   Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.2.5.2.4   Method of test

Related ICS/IXIT statements

  -   supported MO circuit switched basic services.

Initial conditions

    System Simulator:

        1 cell, default parameters.

    User Equipment:

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

        The UE is brought into the state U4 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The user requests termination of the call. The UE shall send a DISCONNECT message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1				MMI action, terminate call
2	->		DISCONNECT	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.2.5.2.5 Test requirements

After step 1 a CC entity of the UE in CC state U4, "Call Delivered", shall send a DISCONNECT message and enter the CC state U11, "Disconnect Request".

10.1.2.5.3 Outgoing call / U4 call delivered / DISCONNECT with in band tones

10.1.2.5.3.1 Definition

The call control entity of the UE being in the state, U4, a DISCONNECT message indicating availability of in band information is received by the UE.

10.1.2.5.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U4, "Call Delivered" shall, upon receipt of a DISCONNECT with a progress indicator indicating in-band information, shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

References

TS 25.331 clause 8.2.1., TS 24.008 clause 5.4.4.1.1, clause 5.5.1 and clause 5.2.1.9.

10.1.2.5.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of a DISCONNECT with a progress indicator indicating in-band information, through-connects the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

10.1.2.5.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U4 by using table10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a DISCONNECT message containing indication of in-band information availability to the UE. The SS checks that if channel mode is MO telephony, the DTCH shall be through connected and the UE enters state U12, disconnect indication. If channel mode is not speech, the DTCH shall not be through connected and the UE shall enter state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	(note)
A2		SS		DTCH in speech mode: the SS will check that the audio path for in band tones is attached.
A3		<-	STATUS ENQUIRY	
A4		->	STATUS	cause #30#, state U12
B2		->	RELEASE	DTCH is not in speech mode:
B3		<-	STATUS ENQUIRY	
B4		->	STATUS	cause #30#, state U19

Specific message contents:

> NOTE: the Progress Indicator, Progress Description:
>
> > - #8 in band information or appropriate pattern now available.

10.1.2.5.3.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U4, "Call Delivered", shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

10.1.2.5.4 Outgoing call / U4 call delivered / DISCONNECT without in band tones

10.1.2.5.4.1 Definition

The call control entity of the UE being in the state, U4, a DISCONNECT message is received by the UE. The DISCONNECT message does not contain indication of in-band information availability.

10.1.2.5.4.2 Conformance requirement

1) A CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of a DISCONNECT without progress indicator, shall return a RELEASE message and enter the CC-state U19, "Release Request".

References

> TS 24.008 clause 5.4.4.

10.1.2.5.4.3 Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of a DISCONNECT without progress indicator, returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.2.5.4.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

> System Simulator:
>
> > 1 cell, default parameters.
>
> User Equipment:

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

The UE is brought into the state U4 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a DISCONNECT message not containing indication of in-band information availability to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	without progress indicator
2	->		RELEASE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.5.4.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U4, "Call Delivered", shall return a RELEASE message and enter the CC-state U19, "Release Request".

10.1.2.5.5   Outgoing call / U4 call delivered / RELEASE received

10.1.2.5.5.1   Definition

The call control entity of the UE being in the state, U4, a RELEASE message is received by the UE.

10.1.2.5.5.2   Conformance requirement

  1) A CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of the RELEASE message shall respond with the RELEASE COMPLETE message and enter the CC-state U0, "Null".

  2) The UE on returning to idle mode shall release the MM-connection and the CC-entities relating to the seven mobile originating transaction identifiers shall be in CC-state U0, "Null".

References

  Conformance requirement 1:   TS 24.008 clause 5.4.2 and clause 5.4.4.

  Conformance requirement 2:   TS 24.008 clause 4.5.3, and clause 5.5.3.2 and 8.3.1.

10.1.2.5.5.3   Test purpose

  1) To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", upon receipt of the RELEASE message will respond with the RELEASE COMPLETE message and enter the CC-state U0, "Null".

  2) To verify that the UE on returning the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile originating transaction identifiers are in CC-state U0, "Null".

10.1.2.5.5.4   Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U4 by using table10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a RELEASE message to the UE. The UE shall respond with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE	with cause "Normal, unspecified"
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.5.5.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U4, "Call Delivered", shall respond with the RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.5.6   Outgoing call / U4 call delivered / lower layer failure

10.1.2.5.6.1   Definition

The call control entity of the UE being in the state, U4, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.5.6.2 Conformance requirement

1) When CC-entity of the UE in CC-state U4, "Call Delivered" has detected a lower layer failure and has returned to idle mode, the CC-entity is in CC-state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3 and clause 5.5.3.2., TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.5.6.3 Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered" having detected a lower layer failure and has returned to idle mode, the CC-entity is in CC-state U0, "Null".

10.1.2.5.6.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U4 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U4. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.2.5.6.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.5.7   Outgoing call / U4 call delivered / traffic channel allocation

10.1.2.5.7.1   Definition

The call control entity of the UE being in the state, U4, a radio bearer establishment procedure is performed.

10.1.2.5.7.2   Conformance requirement

1) A CC-entity of the UE in CC-state U4, "Call Delivered", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall stay in CC-state U4.

References

TS 25.331 clause 8.2.1., TS 24.008 clause 5.2.1.9.

10.1.2.5.7.3   Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, stays in CC-state U4.

10.1.2.5.7.4   Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U4 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1			Radio Bearer Setup Procedure	DTCH, See TS34.108
2	<-		STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U4

Specific message contents:

None.

10.1.2.5.7.5 Test requirements

After step 1 the CC state U4, "Call delivered", shall remain unchanged.

10.1.2.5.8 Outgoing call / U4 call delivered / unknown message received

10.1.2.5.8.1 Definition

The call control entity of the UE being in the state, U4, an unknown message is received by the UE.

10.1.2.5.8.2 Conformance requirement

1) A CC-entity of the UE in CC-state U4, "Call Delivered", having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.2.5.8.3 Test purpose

To verify that a CC-entity of the UE in CC-state U4, "Call Delivered", having received an unknown message from its peer entity returns a STATUS message.

10.1.2.5.8.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U4 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U4. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		<-	unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U4
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U4

Specific message contents:

None.

10.1.2.5.8.5 Test requirements

After step 1 a CC entity of the UE in CC state U4, "Call Delivered", ~~U3, "Mobile Originating Call Proceeding",~~ shall return a STATUS message.

10.1.2.6 U10 call active

10.1.2.6.1 U10 call active / termination requested by the user

10.1.2.6.1.1 Definition

The call control entity of the UE being in the state, U10, the user requests to terminate the call.

10.1.2.6.1.2 Conformance requirement

1) A CC-entity of the UE in CC-state U10, "Call Active", upon request by the user to terminate shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

> TS 24.007 clause 6.2.2, TS 24.008 clause 5.4.3.

10.1.2.6.1.3 Test purpose

To verify that the a CC-entity of the UE in CC-state U10, "Call Active", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.2.6.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

> System Simulator:

> > 1 cell, default parameters.

> User Equipment:

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

> > The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U10. The user requests termination of the call. The UE shall send a DISCONNECT message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				MMI action, terminate call
2	->		DISCONNECT	U11
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.2.6.1.5   Test requirements

After step 1 a CC entity of the UE in CC state U10, "Call Active", shall send a DISCONNECT message and enter the CC state U11, "Disconnect Request".

10.1.2.6.2   U10 call active / RELEASE received

10.1.2.6.2.1   Definition

The call control entity of the UE being in the state, U10, a RELEASE message is received by the UE.

10.1.2.6.2.2   Conformance requirement

1) A CC-entity of the UE in CC-state U10, "Call Active", upon receipt of the RELEASE shall respond with the RELEASE COMPLETE message and enter the CC-state U0, "Null"

2) When the UE returns to the idle mode it shall release the MM-connection and the CC-entities relating to the seven mobile originating transaction identifiers shall be in CC-state U0, "Null"

References

   Conformance requirement 1:   TS 24.008 clause 5.4.2 and clause 5.4.4.

   Conformance requirement 2:   TS 24.008 clause 4.5.3, and clause 5.5.3.2 and 8.3.1.

10.1.2.6.2.3   Test purpose

1) To verify that the a CC-entity of the UE in CC-state U10, "Call Active", upon receive of the RELEASE will respond with the RELEASE COMPLETE message and enter the CC-state U0, "Null"

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile originating transaction identifiers are in CC-state U0, "Null"

10.1.2.6.2.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U10. The SS sends a RELEASE message to the UE. The UE shall respond with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE	with cause "Normal, unspecified"
2	->		RELEASE COMPLETE	the UE starts T3240
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.6.2.5 Test requirements

After step 1 a CC entity of the UE in CC state U10, "Call Active", shall return a RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.6.3 U10 call active / DISCONNECT with in band tones

10.1.2.6.3.1 Definition

The call control entity of the UE being in the state, U10, a DISCONNECT message indicating availability of in band information is received by the UE.

10.1.2.6.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U10, "Call Active", upon receipt of a DISCONNECT message with a Progress Indicator indicating in-band information, shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

References

TS 24.008 clause 5.4.4.1.1 and clause 5.5.1.

10.1.2.6.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U10, "Call Active", upon receipt of a DISCONNECT message with a Progress Indicator indicating in-band information, through-connects the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE sends a RELEASE message.

10.1.2.6.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U10. The SS sends a DISCONNECT message containing indication of in-band information availability to the UE. The SS checks that if channel mode is speech, the DTCH shall be through connected and the UE enters state U12, disconnect indication. If channel mode is not speech, the DTCH shall not be through connected and the UE enters state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		DISCONNECT	(note)
A2	SS			DTCH in speech mode: the SS will check that the audio path for in band tones is attached.
A3	<-		STATUS ENQUIRY	
A4	->		STATUS	cause #30#, state U12
B2	->		RELEASE	DTCH is not in speech mode:
B3	<-		STATUS ENQUIRY	
B4	->		STATUS	cause #30#, state U19

Specific message contents:

> NOTE: the Progress Indicator, Progress Description:
>
> #8 in band information or appropriate pattern now available.

10.1.2.6.3.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U10, "Call Active", shall through-connect the speech channel to make in-band announcements available, if traffic channel is in speech mode. If DTCH is not in speech mode, the UE shall send a RELEASE message.

10.1.2.6.4 U10 call active / DISCONNECT without in band tones

10.1.2.6.4.1 Definition

The call control entity of the UE being in the state, U10, a DISCONNECT message is received by the UE. The DISCONNECT message does not contain indication of in-band information availability.

10.1.2.6.4.2 Conformance requirement

1) A CC-entity of the UE in CC-state U10, "Call Active", upon receipt of a DISCONNECT message without progress indicator, shall return a RELEASE message and enter the CC-state U19, "Release Request".

References

> TS 24.008 clause 5.4.4.

10.1.2.6.4.3 Test purpose

To verify that the a CC-entity of the UE in CC-state U10, "Call Active", upon receipt of a DISCONNECT message without progress indicator, returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.2.6.4.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

> System Simulator:
>
> > 1 cell, default parameters.
>
> User Equipment:
>
> > The UE is in MM-state "idle, updated" with valid TMSI and CKSN.
>
> > The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U10. The SS sends a DISCONNECT message not containing indication of in-band information availability to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	without progress indicator
2	->		RELEASE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.6.4.5 Test requirements

A CC-entity of the UE in CC-state U10, "Call Active", shall return a RELEASE message and enter the CC-state U19, "Release Request".

10.1.2.6.5 U10 call active / RELEASE COMPLETE received

10.1.2.6.5.1 Definition

The call control entity of the UE being in the state, U10, the call is cleared by a RELEASE COMPLETE message sent by the SS.

10.1.2.6.5.2 Conformance requirement

1) A CC entity of the UE in CC-state U10, "active", upon receipt of a RELEASE COMPLETE message with valid cause value, shall enter CC state U0, "Null".

2) On returning to idle mode, the CC entities relating to the seven mobile originating transaction identifiers shall be in state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.2 and clause 5.4.4.

Conformance requirement 2: TS 24.008 clause 5.4.4.1.3 and clause 8.3.1.

10.1.2.6.5.3 Test purpose

1) To verify that a CC entity of the UE in CC-state U10, "Call active" upon receipt of a RELEASE COMPLETE message with valid cause value, enters CC state U0, "Null".

2) To verify that in returning to idle mode, the CC entities relating to the seven mobile originating transaction identifiers are in state U0, "Null".

10.1.2.6.5.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 by using table 10.1.2/1.

Test procedure

The SS sends a RELEASE COMPLETE message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE COMPLETE	note 1
2	<-		STATUS ENQUIRY	note 2
3	->		RELEASE COMPLETE	cause #81# (invalid TI value),
4		SS		repeat steps 2-3 to cover all the transaction identifiers from 000...110
5	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
6	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

NOTE 1: With the cause value chosen arbitrarily.

NOTE 2: TI flag has the value indicating the UE as an originator of the call.

10.1.2.6.5.5 Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.6.6 U10 call active / SETUP received

10.1.2.6.6.1 Definition

If the UE does not react correctly when receiving a SETUP message on a new Transaction Identifier during an active call, the active call may be lost.

10.1.2.6.6.2 Conformance requirement

1) A UE that has a call established when receiving a SETUP message shall respond either with a CALL CONFIRMED message or a RELEASE COMPLETE message, both with cause #17 "user busy".

2) The call control state of the existing transaction shall not be affected by the incoming SETUP message.

Reference(s):

Conformance requirement 1: TS 24.008 clause 5.2.2.3.1.

Conformance requirement 2: TS 24.008 clause 5.1.1.

10.1.2.6.6.3 Test purpose

1) To verify that a User Equipment that has a call established and receives a SETUP message answers either with a CALL CONFIRMED message with cause "user busy" if it supports call waiting, or with a RELEASE COMPLETE message with cause "user busy" otherwise.

2) To verify that after having sent this message, the UE is still in state U10 for the established call.

10.1.2.6.6.4 Method of test

Related ICS/IXIT statement(s)

- supported MO circuit switched basic services.

- support of call waiting Y/N.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

The UE is idle updated with valid TMSI and CKSN.

The UE is brought into the state U10 by using table 10.1.2/1.

Related ICS/IXIT statement(s)

- supported MO circuit switched basic services.

- support of call waiting Y/N.

Test Procedure

The UE has a mobile originated call in the U10 state. When UE sends a SETUP message and SS receives it in the first call establishment, SS sends a CALL PROCEEDING message without Network Call Control Capabilities Capability IE.

The SS sends a SETUP message to the UE (with signal IE indicating "call waiting tone on" and without Network Call Control Capabilities Capability IE).

If the UE does not support call waiting it shall answer by a RELEASE COMPLETE message.

If the UE supports call waiting it shall answer by a CALL CONFIRMED message followed by an ALERTING. The second transaction is then released by the SS with a RELEASE COMPLETE message.

In both cases the SS checks by using the status enquiry procedure that the CC entity of the UE is still in state U10, active call for the original call.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	SETUP	this message establishes a second transaction The TI value shall be the same as the one that is in use for the MO call. The TI flag shall have the value specified for an MT call.
A2	->		RELEASE COMPLETE	if the UE does not support call waiting with cause "user busy" with the TI of the second transaction
B2	->		CALL CONFIRMED	if the UE supports call waiting with cause "user busy" with the TI of the second transaction
B3	->		ALERTING	with the TI of the second transaction
B4		<-	RELEASE COMPLETE	with the TI of the second transaction
5		<-	STATUS ENQUIRY	with the TI of the original transaction
6	->		STATUS	cause #30#, state U10 with the TI of the original transaction

NOTE: The Transaction Identifier of the second transaction shall be different from the one of the already established transaction.

Specific message contents

SETUP message contains a Signal IE with value "call waiting tone on" (H'07).

10.1.2.6.6.5 Test requirements

After step 1 a UE that has a call established shall answer either with a CALL CONFIRMED message with cause "user busy" if it supports call waiting, or with a RELEASE COMPLETE message with cause "user busy" otherwise.

After step A2 or B2 the UE is still in state U10 for the established call.

10.1.2.7 U11 disconnect request

10.1.2.7.1 U11 disconnect request / clear collision

10.1.2.7.1.1 Definition

The call control entity of the UE being in the state, U11, a DISCONNECT message is received by the UE.

10.1.2.7.1.2 Conformance requirement

1) A CC-entity of the UE in CC-state U11, "Disconnect Request", upon receipt of a DISCONNECT message, shall return to its peer entity the RELEASE message and enter the CC-state U19, "Release Request".

References

TS 24.008 clause 5.4.4.2.5.1.

10.1.2.7.1.3 Test purpose

To verify that the a CC-entity of the UE in CC-state U11, "Disconnect Request", upon receipt of a DISCONNECT message, returns to its peer entity the RELEASE message and enters the CC-state U19, "Release Request".

10.1.2.7.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U11 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U11. The SS sends a DISCONNECT message to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		<-	DISCONNECT	
2	->		RELEASE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.7.1.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U11, "Disconnect Request", shall return the RELEASE message and enter the CC-state U19, "Release Request".

10.1.2.7.2 U11 disconnect request / RELEASE received

10.1.2.7.2.1 Definition

The call control entity of the UE being in the state, U11, a RELEASE message is received by the UE.

10.1.2.7.2.2 Conformance requirement

1) A CC-entity of the UE in CC-state U11, "Disconnect Request", upon receipt of the RELEASE message shall return RELEASE COMPLETE and enter the CC-state U0, "Null".

2) On returning to the idle mode the UE shall release the MM-connection and the CC-entities relating to the seven mobile originating transaction identifiers shall be in CC-state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.3.

Conformance requirement 2: TS 24.008 clause 4.5.3, clause 5.5.3.2 and clause 8.3.1.

10.1.2.7.2.3 Test purpose

1) To verify that the a CC-entity of the UE in CC-state U11, "Disconnect Request", upon receipt of the RELEASE message shall return RELEASE COMPLETE and enter the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile originating transaction identifiers are in CC-state U0, "Null".

10.1.2.7.2.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U11 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U11. The SS sends a RELEASE message to the UE. The UE shall respond with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE	
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5		SS		repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.7.2.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U11, "Disconnect Request", shall return the RELEASE COMPLETE.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.7.3   U11 disconnect request / timer T305 time-out

10.1.2.7.3.1   Definition

The call control entity of the UE being in the state, U11, if no response is then received from the SS, timer T305 expires at the UE side.

10.1.2.7.3.2   Conformance requirement

1) A CC-entity of the UE in CC-state U11, "Disconnect Request" shall on expiry of T305, proceed with the connection release procedure by sending the RELEASE message to its peer entity and shall enter the CC-state U19, "Release Request".

References

TS 24.008 clause 5.4.3 and clause 11.3.

10.1.2.7.3.3   Test purpose

To verify that the CC-entity of the UE in CC-state U11, "Disconnect Request" shall on expiry of T305, proceed with the connection release procedure by sending the RELEASE message to its peer entity and enters the CC-state U19, "Release Request".

10.1.2.7.3.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U11 by using table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U11. Then T305 expires at the UE and the UE shall send a RELEASE message. The SS checks timer T305 accuracy and that the CC entity has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS waits until T305 expires at the UE
2	->		RELEASE	SS checks the time between DISCONNECT and RELEASE (note), check the timer T305 accuracy, see TS34.108 clause 4.2.3
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

NOTE: With the same cause value as originally contained in the DISCONNECT message. An additional cause information element (#102 recovery on timer expiry) may be included.

10.1.2.7.3.5 Test requirements

Upon expiry of timer T305 a CC-entity of the UE in CC-state U11, "Disconnect Request", shall proceed with the connection release procedure by sending the RELEASE message and enter the CC-state U19, "Release Request".

10.1.2.7.4 U11 disconnect request / lower layer failure

10.1.2.7.4.1 Definition

The call control entity of the UE being in the state, U11, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.7.4.2 Conformance requirement

1) A CC-entity of the UE in CC-state U11, "Disconnect Request" having detected a lower layer failure shall return to the idle mode. The CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.7.4.3   Test purpose

To verify that the a CC-entity of the UE in CC-state U11, "Disconnect Request" having detected a lower layer failure returns to the idle mode. The CC entity is thus in state U0, "Null".

10.1.2.7.4.4   Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U11 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U11. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s.

Specific message contents:

None.

10.1.2.7.4.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.7.5 U11 disconnect request / unknown message received

10.1.2.7.5.1 Definition

The call control entity of the UE being in the state, U11, an unknown message is received by the UE.

10.1.2.7.5.2 Conformance requirement

1) A CC-entity of the UE in CC-state U11, "Disconnect Request", having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.2.7.5.3 Test purpose

To verify that a CC-entity of the UE in CC-state U11, "Disconnect Request", having received an unknown message from its peer entity returns a STATUS message.

10.1.2.7.5.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U11 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U11. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U11
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.2.7.5.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U11, "Disconnect Request", shall return a STATUS message.

10.1.2.8 U12 disconnect indication

10.1.2.8.1 U12 disconnect indication / call releasing requested by the user

10.1.2.8.1.1 Definition

The call control entity of the UE being in the state, U12, the user requests to terminate the call.

10.1.2.8.1.2 Conformance requirement

1) A CC-entity of the UE in CC-state U12, "Disconnect Indication" being in network initiated call release phase, shall, upon receiving a call release request from the user send a RELEASE to its peer entity and enter CC-state U19, "Release Request".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.4.4.

10.1.2.8.1.3 Test purpose

To verify that a CC-entity of the UE in CC-state U12, "Disconnect Indication" being in network initiated call release phase, shall, upon receiving a call release request from the user sends a RELEASE to its peer entity and enters CC-state U19, "Release Request"

10.1.2.8.1.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U12 by using Option A of table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U12. The user requests termination of the call. The UE shall send a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1				MMI action, "on hook"
2	->		RELEASE	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.8.1.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U12, "Disconnect Indication" being in network initiated call release phase, shall send a RELEASE message and enter CC-state U19, "Release Request".

10.1.2.8.2 U12 disconnect indication / RELEASE received

10.1.2.8.2.1 Definition

The call control entity of the UE being in the state, U12, a RELEASE message is received by the UE.

10.1.2.8.2.2 Conformance requirement

1) A CC-entity of the UE in CC-state U12, "Disconnect Indication", upon receipt of a RELEASE message shall return to its peer entity the RELEASE COMPLETE message and enter the CC-state U0, "Null".

2) On returning to the idle mode the UE shall release the MM-connection and the CC-entities relating to the seven mobile originating transaction identifiers shall be in CC-state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.2

Conformance requirement 2: TS 24.008 clause 4.5.3, clause 5.5.3.2 and clause 8.3.1.

10.1.2.8.2.3 Test purpose

1) To verify that a CC-entity of the UE in CC-state U12, "Disconnect Indication", upon receipt of a RELEASE message returns to its peer entity the RELEASE COMPLETE message and enters the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile originating transaction identifiers are in CC-state U0, "Null".

10.1.2.8.2.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U12 by using Option A of table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U12. The SS sends a RELEASE message to the UE. The UE shall respond with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	<-		RELEASE	
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5		SS		repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.8.2.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U12, "Disconnect Indication", shall return the RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.8.3 U12 disconnect indication / lower layer failure

10.1.2.8.3.1 Definition

The call control entity of the UE being in the state, U12, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.8.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U12, "Disconnect Indication" having detected a lower layer failure shall return to idle mode. The CC-entity is in state U0, "Null".

References

TS 24.008 clause 5.4.4.2.5.1, clause 4.5.3, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.8.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U12, "Disconnect Indication" having detected a lower layer failure returns to idle mode. The CC-entity is thus in state U0, "Null".

10.1.2.8.3.4   Method of test

Related ICS/IXIT statements

-    supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U12 by using Option A of table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U12. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.2.8.3.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.2.8.4   U12 disconnect indication / unknown message received

10.1.2.8.4.1   Definition

The call control entity of the UE being in the state, U12, an unknown message is received by the UE.

10.1.2.8.4.2   Conformance requirement

A CC-entity of the UE in CC-state U12, "Disconnect Indication" having received an unknown message from its peer entity shall return a STATUS message.

References

> TS 24.008 clause 8.4.

10.1.2.8.4.3   Test purpose

To verify that a CC-entity of the UE in CC-state U12, "Disconnect Indication" having received an unknown message from its peer entity returns a STATUS message.

10.1.2.8.4.4   Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

> System Simulator:

> > 1 cell, default parameters.

> User Equipment:

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

> > The UE is brought into the state U12 by using Option A of table 10.1.2/3.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U12. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U12
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U12

Specific message contents:

None.

10.1.2.8.4.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U12, "Disconnect Indication", shall return a STATUS message.

10.1.2.9   Outgoing call / U19 release request

10.1.2.9.1   Outgoing call / U19 release request / timer T308 time-out

10.1.2.9.1.1   Definition

The call control entity of the UE being in the state, U19, if no response is then received from the SS, timer T308 expires at the UE side.

10.1.2.9.1.2   Conformance requirement

1) A CC-entity of the UE in CC-state U19, "Release Request" will, upon the first expiry of timer T308 send the RELEASE message to its peer entity and remain in the CC-state U19.

References

TS 24.008 clause 5.4.4.1.3.1 and clause 11.3.

10.1.2.9.1.3   Test purpose

To verify that a CC-entity of the UE in CC-state U19, "Release Request" will, upon the first expiry of timer T308 send the RELEASE message to its peer entity and remain in the CC-state U19.

10.1.2.9.1.4   Method of test

Related ICS/IXIT statements

-   supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U19 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U19. When T308 expires at the UE, the UE shall send a RELEASE message. The SS checks timer T308 accuracy and that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS waits until T308 at the UE
2	->		RELEASE	SS checks the time between the two RELEASE messages
				check the timer T308 accuracy, see TS34.108 clause 4.2.3
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.2.9.1.5   Test requirements

Upon the first expiry of timer T308 (after step 1) a CC-entity of the UE in CC-state U19, "Release Request", shall send the RELEASE message and remain in the CC-state U19.

10.1.2.9.2 Outgoing call / U19 release request / 2nd timer T308 time-out

10.1.2.9.2.1 Definition

The call control entity of the UE being in the state, U19, if no response is then received after timer T308 has expired two times in success at the UE.

10.1.2.9.2.2 Conformance requirement

1) A CC-entity of the UE in CC-state U19, "Release Request", upon the 2nd expiry of the timer T308, shall enter the CC-state U0, "Null".

2) Subsequently the UE shall proceed with releasing the MM-connection and enter the idle mode with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.4.1.3.1 and clause 11.3.

Conformance requirement 2: TS 24.008 clause 4.5.3, and clause 5.5.3.2 and 8.3.1.

10.1.2.9.2.3 Test purpose

1) To verify that a CC-entity of the UE in CC-state U19, "Release Request", upon the 2nd expiry of the timer T308, enters the CC-state U0, "Null".

2) To verify that subsequently the UE proceeds with releasing the MM-connection and enters the idle mode with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

10.1.2.9.2.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U19 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U19. The SS allows T308 expiry at the UE, and the UE shall repeat sending the RELEASE message and start timer T308 again. The SS allows again T308 expiry at the UE. The UE shall abort the RRC connection. The SS waits long enough to enable the UE to return to idle state listening to paging, and then pages UE to create RRC connection. Finally, the SS will check the state of the UE by using STATUS ENQUIRY with the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS waits until T308 expiry at the UE
2	->		RELEASE	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19
5		SS		SS waits until the second T308 expiry at the UE
6		SS		SS waits T3240 expiry at the UE
7	UE			the main signalling link shall be released.
8		SS		SS waits 10 s for the UE to return to listening to paging
9			Mobile terminated establishment of Radio Resource Connection	See TS34.108
9a	->		PAGING RESPONSE	
10	<-		STATUS ENQUIRY	
11	->		RELEASE COMPLETE	cause #81# (invalid TI value)
12		SS		repeat steps 10-11 to cover all the transaction identifiers from 000...110
13	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
14	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.9.2.5 Test requirements

Upon the 2nd expiry of the timer T308 (after step 5) a CC-entity of the UE in CC-state U19, "Release Request", shall enter the CC-state U0, "Null".

After step 10 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.9.3 Outgoing call / U19 release request / RELEASE received

10.1.2.9.3.1 Definition

The call control entity of the UE being in the state, U19, a RELEASE message is received by the UE.

10.1.2.9.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U19, "Release Request", upon receipt of a RELEASE, shall release the MM-connection and enter the CC-state U0, "Null" with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

References

TS 24.008 clause 5.4.4.2.5.1, clause 11.3, and clause 5.5.3.2 and 8.3.1.

10.1.2.9.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U19, "Release Request", upon receipt of a RELEASE, shall release the MM-connection and enters the CC-state U0, "Null" with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

10.1.2.9.3.4   Method of test

Related ICS/IXIT statements

-   supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U19 by using table 10.1.2/4.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U19. The SS sends a RELEASE message to the UE. The UE shall release the MM-connection. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE	(note)
2	<-		STATUS ENQUIRY	
3	->		RELEASE COMPLETE	cause #81# (invalid TI value)
4	SS			repeat steps 2-3 to cover all the transaction identifiers from 000...110
5	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
6	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

NOTE: With the same cause number as originally contained in DISC and optional cause #102 recovery on timer expiry.

10.1.2.9.3.5   Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.9.4   Outgoing call / U19 release request / RELEASE COMPLETE received

10.1.2.9.4.1   Definition

The call control entity of the UE being in the state, U19, a RELEASE COMPLETE message is received by the UE.

10.1.2.9.4.2   Conformance requirement

1) A CC-entity of the UE in CC-state U19, "Release Request", upon receipt of a RELEASE COMPLETE, shall release the MM-connection and enter the CC-state U0, "Null" with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

References

TS 24.008 clause 5.4.4.1.3, clause 4.5.3 and clause 8.3.1.

10.1.2.9.4.3 Test purpose

To verify that a CC-entity of the UE in CC-state U19, "Release Request", upon receipt of a RELEASE COMPLETE, shall release the MM-connection and enters the CC-state U0, "Null" with the CC entities relating to the seven mobile originating transaction identifiers in state U0, "Null".

10.1.2.9.4.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U19 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The CC entity of the UE is brought to the state U19. The SS sends a RELEASE COMPLETE message to the UE. The UE shall release the MM-connection. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE COMPLETE	
2	<-		STATUS ENQUIRY	
3	->		RELEASE COMPLETE	cause #81# (invalid TI value)
4	SS			repeat steps 2-3 to cover all the transaction identifiers from 000...110
5	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
6	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.2.9.4.5 Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.2.9.5 Outgoing call / U19 release request / lower layer failure

10.1.2.9.5.1 Definition

The call control entity of the UE being in the state, U19, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.2.9.5.2 Conformance requirement

A CC-entity of the UE in CC-state U19, "Release Request", having detected a lower layer failure, shall return to the idle mode, the CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.2.9.5.3 Test purpose

To verify that a CC-entity of the UE in CC-state U19, "Release Request", having detected a lower layer failure, returns to the idle mode, the CC entity is in state U0, "Null".

10.1.2.9.5.4 Method of test

Related ICS/IXIT statements

- supported MO circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U19 by using table 10.1.2/1.

Test procedure

An MO circuit switched basic service is selected that is supported by the UE; if the UE supports MO telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then, the UE is made to initiate a call. The UE is brought to the state U19. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2		->	CELL UPDATE	CCCH
3		<-	RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.2.9.5.5 Test requirements

After step 4 CC the UE shall not send any message to the SS during 60 s.

10.1.3 Establishment of an incoming call / Initial conditions

The tables below describe message exchanges which bring the UE in the requested initial states in case of an incoming call.

A state may be taken as initial only when all the states which lead to this initial states have been validated. The order will be U0, U6, U9, U7, U8, U10, U26 etc. as in the following tables.

Table 10.1.3/1: Establishment of an incoming call, procedure 1

Step	Direction		Message	Comments
	UE	**SS**		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108
2		->	PAGING RESPONSE	
3		<-	AUTHENTICATION REQUEST	
4		->	AUTHENTICATION RESPONSE	
5		<-	SECURITY MODE COMMAND	
6		->	SECURITY MODE COMPLETE	
7		<-	SETUP	U6, (note 1)
8		->	CALL CONFIRMED	U9
A9		->	CONNECT	U8, p = Y, (note 2)
B9		->	ALERTING	U7, p = N, (note 2)
B10	UE			(note 3)
B11		->	CONNECT	U8
12			Radio Bearer Setup Procedure	DTCH, See TS 34.108
13		<-	CONNECT ACKNOWLEDGE	U10
NOTE 1: With signal information included in the SETUP message.				
NOTE 2: The UE is supporting immediate connect (p = Y/N). See ICS/IXIT statement.				
NOTE 3: If necessary (see ICS/IXIT statement), the UE is made to accept the call in the way described in a ICS/IXIT statement.				

Table 10.1.3/2: Establishment of an incoming call, procedure 2

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS34.108
2	->		PAGING RESPONSE	
3		<-	SECURITY MODE COMMAND	
4	->		SECURITY MODE COMPLETE	
5		<-	SETUP	U6, (note 1)
6	->		CALL CONFIRMED	U9
A7	->		CONNECT	U8, p = Y, (note 2)
A8			Radio Bearer Setup Procedure	DTCH, See TS34.108
B7	->		ALERTING	U7, p = N, (note 2)
B8			Radio Bearer Setup Procedure	DTCH, See TS34.108
B9	UE			(note 3)
B10	->		CONNECT	U8
11		<-	AUTHENTICATION REQUEST	
12	->		AUTHENTICATION RESPONSE	
13		<-	CONNECT ACKNOWLEDGE	U10
NOTE 1: With signal information included in the SETUP message.				
NOTE 2: The UE is supporting immediate connect (p = Y/N). See ICS/IXIT statement.				
NOTE 3: If necessary (see ICS/IXIT statement), the UE is made to accept the call in the way described in a ICS/IXIT statement.				

Table 10.1.3/3: Void

Table 10.1.3/4: Establishment of an incoming call, procedure 4

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See TS 34.108
2	->		PAGING RESPONSE	
3		<-	SECURITY MODE COMMAND	
4	->		SECURITY MODE COMPLETE	
5		<-	SETUP	U6, (note 1)
6	->		CALL CONFIRMED	U9
7			Radio Bearer Setup Procedure	DTCH, See TS 34.108
A8	->		CONNECT	U8, p = Y, (note 2)
B8	->		ALERTING	U7, p = N, (note 2)
B9	UE			(note 3)
B10	->		CONNECT	U8
11		<-	AUTHENTICATION REQUEST	
12	->		AUTHENTICATION RESPONSE	
13		<-	CONNECT ACKNOWLEDGE	U10
NOTE 1: The signal information element is not included in the SETUP message.				
NOTE 2: The UE is supporting immediate connect (p = Y/N). See ICS/IXIT statement.				
NOTE 3: If necessary (see ICS/IXIT statement), the UE is made to accept the call in the way described in a ICS/IXIT statement.				

10.1.3.1 Incoming call / U0 null state

10.1.3.1.1 Incoming call / U0 null state / SETUP received with a non supported bearer capability

10.1.3.1.1.1 Definition

The call control entity of the UE being in the state, U0, a SETUP message is received with only one bearer capability and this bearer capability is not supported by the UE.

10.1.3.1.1.2 Conformance requirement

1) A CC entity of the UE, upon receipt of SETUP containing one bearer capability and this bearer capability is not supported, shall return a RELEASE COMPLETE with correct cause value to its peer entity and return to the idle mode. The CC-entities relating to the seven mobile terminating transaction identifiers shall be in the state U0,"Null".

References

TS 24.008 clause 5.2.2.2, clause 8.3.1 and annex B.

10.1.3.1.1.3 Test purpose

To verify that a CC entity of the UE, upon receipt of SETUP containing one bearer capability and this bearer capability is not supported, returns a RELEASE COMPLETE with correct cause value to its peer entity, and returns to the idle mode. To verify that the CC-entities relating to the seven mobile terminating transaction identifiers are then in the state U0, "Null".

10.1.3.1.1.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

Test procedure

A mobile terminated call is initiated. The UE receives a SETUP message that contains a bearer capability not supported by the UE. The UE returns a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity is still in the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	SS sends paging, See TS34.108
2	->		PAGING RESPONSE	
3	<-		AUTHENTICATION REQUEST	
4	->		AUTHENTICATION RESPONSE	
5	<-		SECURITY MODE COMMAND	
6	->		SECURITY MODE COMPLETE	
7	<-		SETUP	(note 1)
8	->		RELEASE COMPLETE	(note 2)
9	<-		STATUS ENQUIRY	
10	->		RELEASE COMPLETE	Cause #81 (invalid TI value).
11		SS		Repeat steps 9-10 to cover all the transaction identifiers from 000... 110.

Specific message contents:

NOTE 1: With one bearer capability and that bearer capability is not supported by the UE.

NOTE 2: With cause #88 incompatible destination.

10.1.3.1.1.5 Test requirements

After step 7 a CC entity of the UE shall return a RELEASE COMPLETE message with cause value #88 (incompatible destination) and return to the idle mode.

After step 9 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.2 Incoming call / U6 call present

10.1.3.2.1 Incoming call / U6 call present / automatic call rejection

10.1.3.2.1.1 Definition

Although the state U6 is transient, the ability to refuse a call (automatically) in this state is tested, if it is implemented at the UE.

10.1.3.2.1.2 Conformance requirement

1) A CC entity of the UE in CC-state U6, "Call Present", upon receipt of a rejection indication of the incoming call from the user, send RELEASE COMPLETE with the appropriate cause value to its peer entity and enter the CC-state U0, "Null". The CC entities relating to the seven mobile terminating transaction identifiers shall be in state U0, "Null".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.2.2.3.1, clause 5.5.3.2 and clause 8.3.1.

10.1.3.2.1.3 Test purpose

To verify that a CC entity of the UE in CC-state U6, "Call Present", shall upon receipt of a rejection indication of the incoming call from the user, shall send RELEASE COMPLETE with the appropriate cause value to its peer entity and enter the CC-state U0, "Null". The CC entities relating to the seven mobile terminating transaction identifiers are then in state U0, "Null".

10.1.3.2.1.4 Method of test

Related ICS/IXIT statements

- supported teleservices;

- the UE supports an ability to refuse a call after receipt of a SETUP message.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U6 by using table 10.1.3/2.

Test procedure

A teleservice is selected that is supported by the UE; if the UE supports speech, the selected teleservice is speech. If necessary, the UE is configured for that teleservice. Then a mobile terminated call is initiated. The call control entire of

the UE is brought to the state U6 (Note: The state U6 is not checked, since it is not stable). The UE is made to refuse the call (the refusal may require some preliminary preparations in order to achieve refusal at this point). The UE shall send a RELEASE COMPLETE message and enter a call control state U0. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				the UE is made to refuse the call (note)
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

NOTE: With cause value #21 call rejected.

10.1.3.2.1.5   Test requirements

After step 1 a CC entity of the UE shall return a RELEASE COMPLETE message with cause value #21 (call rejected) and return to the idle mode.

After step 11 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.3   Incoming call / U9 mobile terminating call confirmed

10.1.3.3.1   Incoming call / U9 mobile terminating call confirmed / alerting or immediate connecting

10.1.3.3.1.1   Definition

The call control entity of the UE having entered the state, U9, with signal information received in the preceding SETUP message, the subsequent behaviour of the UE is tested.

10.1.3.3.1.2   Conformance requirement

1) A CC entity in CC-state U9, "Mobile Terminating Call Confirmed", (if signalled by the network in previous SETUP message that it may alert) shall either send a ALERTING message to its peer entity and enter state U7, or send a CONNECT message to its peer entity and enter U8.

References

TS 24.008 clause 5.2.2.3.2 and clause 5.2.2.5.

10.1.3.3.1.3   Test purpose

To verify that a CC entity in CC-state U9, "Mobile Terminating Call Confirmed", (if signalled by the network in previous SETUP message that it may alert) will either send a ALERTING message to its peer entity and enter state U7, or send a CONNECT message to its peer entity and enter U8.

10.1.3.3.1.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/2.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9 by using a SETUP message containing signalling information element. (The state U9 is not a stable state in this case, and consequently it is not checked as an initial state.) If the UE supports immediate connect for the selected basic service (p = Y), it sends a CONNECT message and enters the state U8, connect request. Otherwise (p = N) the UE sends an ALERTING message and enters the state U7, call receiving. The SS checks by using the status enquiry procedure that the CC entity has entered its state as described.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
A1	->		CONNECT	p = Y
A2		<-	STATUS ENQUIRY	
A3	->		STATUS	cause #30#, state U8
B1	->		ALERTING	p = N
B2		<-	STATUS ENQUIRY	
B3	->		STATUS	cause #30#, state U7

Specific message contents:

None.

10.1.3.3.1.5 Test requirements

A CC entity in CC-state U9, "Mobile Terminating Call Confirmed", (if signalled by the network in previous SETUP message that it may alert) shall either send an ALERTING message and enter state U7, or send a CONNECT message and enter U8.

10.1.3.3.2 Incoming call / U9 mobile terminating call confirmed / DTCH assignment

10.1.3.3.2.1 Definition

The call control entity of the UE being in the state, U9, a radio bearer establishment procedure is performed for traffic channel.

10.1.3.3.2.2   Conformance requirement

1) A CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall send an ALERTING message and enter state U7.

References

TS 25.331 clause 8.2.1, TS 24.008 clause 5.2.2.7 and clause 5.2.2.3.2.

10.1.3.3.2.3   Test purpose

To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall sends an ALERTING message and enters state U7.

10.1.3.3.2.4   Method of test

Related ICS/IXIT statements

-   supported MT circuit switched basic services;

-   MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9 (by using a SETUP message not containing the signal information element). The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The UE sends an ALERTING message and enters state U7, call received. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	DTCH, See TS34.108
2	->		ALERTING	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U7

Specific message contents:

None.

10.1.3.3.2.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed" shall send an ALERTING message and enter state U7.

10.1.3.3.3 Incoming call / U9 mobile terminating call confirmed / termination requested by the user

10.1.3.3.3.1 Definition

The call control entity of the UE being in the state, U9, the user requests for releasing of the call.

10.1.3.3.3.2 Conformance requirement

1) A CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon request by the user to terminate shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.4.3.

10.1.3.3.3.3 Test purpose

To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.3.3.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used;

- the UE supports user requested call clearing in the state U9.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9 (by using a SETUP message not containing the signal information element). Then the user requests termination of the call, if possible. The UE sends a DISCONNECT message and enters state U11, disconnect request. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				the UE is made to clear the call
2		->	DISCONNECT	
3		<-	STATUS ENQUIRY	
4		->	STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.3.3.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.3.4 Incoming call / U9 mobile terminating call confirmed / DISCONNECT received

10.1.3.3.4.1 Definition

The call control entity of the UE being in the state, U9, a DISCONNECT message is received by the UE.

10.1.3.3.4.2 Conformance requirement

1) A CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon receipt of a DISCONNECT shall return a RELEASE message and enter the CC-state U19, "Release Request".

References

TS 24.008 clause 5.4.4.

10.1.3.3.4.3 Test purpose

To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon receipt of a DISCONNECT returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.3.3.4.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9. The SS sends a DISCONNECT message to the UE. The UE responds by sending a RELEASE message and enters state U19, release request. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	
2	->		RELEASE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U19

Specific message contents:

None.

10.1.3.3.4.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U9, "UE Terminating Call Confirmed", shall return a RELEASE message and enter the CC-state U19, "Release Request".

10.1.3.3.5 Incoming call / U9 mobile terminating call confirmed / RELEASE received

10.1.3.3.5.1 Definition

The call control entity of the UE being in the state, U9, a RELEASE message is received by the UE.

10.1.3.3.5.2 Conformance requirement

1) A CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon receipt of a RELEASE shall return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) On returning to the idle mode the UE shall release the MM-connection and the CC-entities relating to the seven mobile terminating transaction identifiers shall be in CC-state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.4.

Conformance requirement 2: TS 24.008 clause 4.5.3, clause 5.5.3.2 and clause 8.3.1.

10.1.3.3.5.3 Test purpose

1) To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", upon receipt of a RELEASE will return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile terminating transaction identifiers are in CC-state U0, "Null".

10.1.3.3.5.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9. The SS sends a RELEASE message to the UE. The UE responds by sending a RELEASE COMPLETE message and enters state U0, null. The SS verifies by using the status enquiry procedure that the UE has entered the correct state with the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE	with cause "Normal, unspecified"
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.3.3.5.5 Test requirements

After step 1 a CC-entity of the UE in CC-state U9, "UE Terminating Call Confirmed", shall return a RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.3.6 Incoming call / U9 mobile terminating call confirmed / lower layer failure

10.1.3.3.6.1 Definition

The call control entity of the UE being in the state, U9, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.3.3.6.2 Conformance requirement

1) A CC entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", having detected a lower layer failure shall return to idle mode, the CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.3.3.6.3   Test purpose

To verify that a CC entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed", having detected a lower layer failure returns to idle mode, the CC entity is in state U0, "Null".

10.1.3.3.6.4   Method of test

Related ICS/IXIT statements

-   supported MT circuit switched basic services;

-   MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The UE is brought to the state U9. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.3.3.6.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.3.3.7 Incoming call / U9 mobile terminating call confirmed / unknown message received

10.1.3.3.7.1 Definition

The call control entity of the UE being in the state, U9, an unknown message is received by the UE.

10.1.3.3.7.2 Conformance requirement

1) A CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed" having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.3.3.7.3 Test purpose

To verify that a CC-entity of the UE in CC-state U9, "Mobile Terminating Call Confirmed" having received an unknown message from its peer entity returns a STATUS message.

10.1.3.3.7.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U9 by using table 10.1.3/4.

Test procedure

A MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U9. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U9
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U9

Specific message contents:

None.

10.1.3.3.7.5   Test requirements

After step 1 a CC-entity of the UE in CC-state U9, "UE Terminating Call Confirmed", shall return a STATUS message.

10.1.3.4   Incoming call / U7 call received

10.1.3.4.1   Incoming call / U7 call received / call accepted

10.1.3.4.1.1   Definition

The call control entity of the UE being in the state, U7, a user accepts the incoming call.

10.1.3.4.1.2   Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", upon a user accepting the incoming call, shall send a CONNECT message to its peer entity and enter the CC-state U8, "Connect Request".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.2.2.5.

10.1.3.4.1.3   Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", upon a user accepting the incoming call, shall send a CONNECT message to its peer entity and enter the CC-state U8, "Connect Request".

10.1.3.4.1.4   Method of test

Related ICS/IXIT statements

-    supported MT circuit switched basic services;

-    MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The user accepts the incoming call. The UE sends a CONNECT message. The SS checks by using the status enquiry procedure that the CC entity has entered state U8, connect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				the UE is made to accept the call by the user
2	->		CONNECT	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U8

Specific message contents:

None.

10.1.3.4.1.5 Test requirements

After step 1 a CC entity of a UE in CC-state U7, "Call Received", shall send a CONNECT message and enter the CC-state U8, "Connect Request".

10.1.3.4.2 Incoming call / U7 call received / termination requested by the user

10.1.3.4.2.1 Definition

The call control entity of the UE being in the state, U7, a user requests to terminate incoming call.

10.1.3.4.2.2 Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", upon request by the user to terminate shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.4.3.

10.1.3.4.2.3 Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.4.2.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The user initiates clearing the incoming call. The UE sends a DISCONNECT message. The SS checks by using the status enquiry procedure that the CC entity has entered state U11, disconnect request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				the UE is made to terminate/reject the call
2	->		DISCONNECT	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.3.4.2.5 Test requirements

After step 1 a CC entity of a UE in CC-state U7, "Call Received", shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.4.3 Incoming call / U7 call received / DISCONNECT received

10.1.3.4.3.1 Definition

The call control entity of the UE being in the state, U7, a DISCONNECT message is received by the UE.

10.1.3.4.3.2 Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", upon receipt of a DISCONNECT with a progress indicator indicating in-band information from network, if a DTCH was not assigned, shall return a RELEASE message and enter the CC-state U19, "Release Request".

References

TS 24.008 clause 5.4.4.

10.1.3.4.3.3 Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", upon receipt of a DISCONNECT with a progress indicator indicating in-band information from network, if a DTCH was not assigned, returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.3.4.3.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The SS sends a DISCONNECT message. The UE responds with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity has entered state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	(note)
2		->	RELEASE	
3		<-	STATUS ENQUIRY	
4		->	STATUS	cause #30#, state U19

Specific message contents:

NOTE: With a progress indicator indicating in-band information; Progress Indicator, Progress Description #8.

10.1.3.4.3.5 Test requirements

After step 1 a CC entity of a UE in CC-state U7, "Call Received", if a DTCH was not assigned, shall return a RELEASE message and enter the CC-state U19, "Release Request".

10.1.3.4.4 Incoming call / U7 call received / RELEASE received

10.1.3.4.4.1 Definition

The call control entity of the UE being in the state, U7, a RELEASE message is received by the UE.

10.1.3.4.4.2 Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", upon receipt of a RELEASE shall return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) On returning to the idle mode the UE shall release the MM-connection and the CC-entities relating to the seven mobile terminating transaction identifiers shall be in CC-state U0, "Null".

References

Conformance requirement 1: TS 24.008 clause 5.4.4.

Conformance requirement 2: TS 24.008 clause 4.5.3, and clause 5.5.3.2 and 8.3.1.

10.1.3.4.4.3   Test purpose

1) To verify that a CC entity of a UE in CC-state U7, "Call Received", upon receipt of a RELEASE will return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile terminating transaction identifiers are in CC-state U0, "Null".

10.1.3.4.4.4   Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The SS sends a RELEASE message. The UE responds with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered state U0, null, with the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	<-		RELEASE	with cause "Normal, unspecified"
2	->		RELEASE COMPLETE	
3	<-		STATUS ENQUIRY	
4	->		RELEASE COMPLETE	cause #81# (invalid TI value)
5		SS		repeat steps 3-4 to cover all the transaction identifiers from 000...110
6	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.3.4.4.5   Test requirements

After step 1 a CC entity of a UE in CC-state U7, "Call Received", shall return a RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.4.5   Incoming call / U7 call received / lower layer failure

10.1.3.4.5.1   Definition

The call control entity of the UE being in the state, U7, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.3.4.5.2   Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", having detected a lower layer failure shall return to idle mode, the CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3, clause 5.5.3.2 and clause 8.3, TS 25.331 clause 8.3.1, and clause 8.5.6.

10.1.3.4.5.3   Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", having detected a lower layer failure returns to idle mode, the CC entity is in state U0, "Null".

10.1.3.4.5.4   Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/2.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The UE is brought to the state U7. The SS modifies the scrambling code of downlink transmission(DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission(DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.3.4.5.5   Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.3.4.6   Incoming call / U7 call received / unknown message received

10.1.3.4.6.1   Definition

The call control entity of the UE being in the state, U7, an unknown message is received by the UE.

10.1.3.4.6.2   Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.3.4.6.3   Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", having received an unknown message from its peer entity returns a STATUS message.

10.1.3.4.6.4   Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		<-	unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U7
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U7

Specific message contents:

None.

10.1.3.4.6.5 Test requirements

After step 1 a CC entity of a UE in CC-state U7, "Call Received", shall return a STATUS message.

10.1.3.4.7 Incoming call / U7 call received / DTCH assignment

10.1.3.4.7.1 Definition

The call control entity of the UE being in the state, U7, a radio bearer establishment procedure is performed for traffic channel.

10.1.3.4.7.2 Conformance requirement

1) A CC entity of a UE in CC-state U7, "Call Received", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall stay in CC-state U7.

References

TS 25.331 clause 8.2.1, TS 24.008 clause 5.2.2.7.

10.1.3.4.7.3 Test purpose

To verify that a CC entity of a UE in CC-state U7, "Call Received", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, stays in CC-state U7.

10.1.3.4.7.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected basic service is telephony. If necessary, the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U7. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS verifies by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	DTCH, See TS34.108
2		<-	STATUS ENQUIRY	
3		->	STATUS	cause #30#, state U7

Specific message contents:

None.

10.1.3.4.7.5   Test requirements

After step 1 the CC state U7, "Call Received", shall remain unchanged.

10.1.3.4.8   Incoming call / U7 call received / RELEASE COMPLETE received

10.1.3.4.8.1   Definition

The call control entity of the UE being in the state, U7, the call is cleared by a RELEASE COMPLETE message sent by the SS.

10.1.3.4.8.2   Conformance requirement

1) A CC entity of the UE in CC-state U7, "call received", upon receipt of a RELEASE COMPLETE message with valid cause value, shall enter CC state U0, "Null".

2) On returning to idle mode, the CC entities relating to the seven mobile terminating transaction identifiers shall be in state U0, "Null".

References

Conformance requirement 1:   TS 24.008 clause 5.4.2 and clause 5.4.4.

Conformance requirement 2:   TS 24.008 clause 5.4.4.1.3 and 8.3.1.

10.1.3.4.8.3   Test purpose

1) To verify that a CC entity of the UE in CC-state U7, "Call received", upon receipt of a RELEASE COMPLETE message with valid cause value, enters CC state U0, "Null".

2) To verify that in returning to idle mode, the CC entities relating to the seven mobile terminating transaction identifiers are in state U0, "Null".

10.1.3.4.8.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U7 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE and for which the UE does not use immediate connection; if the UE supports MT telephony without immediate connection, the selected service is telephony. If necessary, the UE is configured for that basic service. The mobile terminated call is initiated. the The CC entity of the UE is brought to U7. The SS sends a RELEASE COMPLETE message to the UE. The SS checks by using the status enquiry procedure that the CC entity has entered the state U0 with all the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		RELEASE COMPLETE	note 1
2	<-		STATUS ENQUIRY	
3	->		RELEASE COMPLETE	cause #81# (invalid TI value), note 2
4	SS			repeat steps 2-3 to cover all the transaction identifiers from 000...110
5	<-		RRC CONNECTION RELEASE	the main signalling link shall be released.
6	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

NOTE 1: With the cause value chosen arbitrarily.

NOTE 2: TI flag has the value indicating the SS as an originator of the call.

10.1.3.4.8.5 Test requirements

After step 2 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.5 Incoming call / U8 connect request

10.1.3.5.1 Incoming call / U8 connect request / CONNECT acknowledged

10.1.3.5.1.1 Definition

The call control entity of the UE being in the state, U8, a CONNECT ACKNOWLEDGE message is received by the UE.

10.1.3.5.1.2 Conformance requirement

A CC entity of a UE in CC-state U8, "Connect Request", upon receipt of CONNECT ACKNOWLEDGE shall enter the CC-state U10, "Call Active".

References

TS 24.008 clause 5.2.2.6.

10.1.3.5.1.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", upon receipt of CONNECT ACKNOWLEDGE shall enter the CC-state U10, "Call Active".

10.1.3.5.1.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/2.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8 (if the UE uses immediate connection for the selected basic service then p = Y, otherwise p = N). The SS sends a CONNECT ACKNOWLEDGE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered state U10, active.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
A1			Radio Bearer Setup Procedure	p = Y, See TS34.108
2	<-		CONNECT ACKNOWLEDGE	
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.3.5.1.5 Test requirements

After step 2 a CC entity of a UE in CC-state U8, "Connect Request", shall enter the CC-state U10, "Call Active".

10.1.3.5.2 Incoming call / U8 connect request / timer T313 time-out

10.1.3.5.2.1 Definition

The call control entity of the UE being in the state, U8, if no response is then received from the SS, timer T313 expires at the UE side.

10.1.3.5.2.2 Conformance requirement

A CC entity of a UE in CC-state U8, "Connect Request", having waited for a reasonable length of time (e.g. expiry of timer T313) without receiving the appropriate protocol message to complete the incoming call, shall initiate the clearing of that incoming call by sending the CC message DISCONNECT and enter the CC-state U11, "Disconnect Request".

If an UE disconnects too early then, in the case of very late assignment of a traffic channel, systematic waste of radio resources may occur.

References

TS 24.008 clause 5.2.2.6 and clause 5.4.3.

10.1.3.5.2.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", having waited for a reasonable length of time (e.g. expiry of timer T313) without receiving the appropriate protocol message to complete the incoming call, shall initiate the clearing of that incoming call by sending the CC message DISCONNECT and enter the CC-state U11, "Disconnect Request".

10.1.3.5.2.4 Method of test

Related ICS/IXIT statements

-   supported MT circuit switched basic services;

-   MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/2.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8 (if the UE uses immediate connection for the selected basic service then p = Y, otherwise p = N). The T313 expires at the UE and the UE sends a DISCONNECT

message and enters state U11, disconnect request. The SS checks by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
A1			Radio Bearer Setup Procedure	p = Y, See TS34.108
2	->		DISCONNECT	Shall not be sent before 15 s after entry into state U8. But, shall be sent before 1,1 * T313 after entry into state U8.
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.3.5.2.5 Test requirements

Upon expiry of timer T313 without receiving the appropriate protocol message to complete the incoming call a CC entity of a UE in CC-state U8, "Connect Request", shall initiate the clearing of that incoming call by sending a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.5.3 Incoming call / U8 connect request / termination requested by the user

10.1.3.5.3.1 Definition

The call control entity of the UE being in the state, U8, the user requests for releasing of the call.

10.1.3.5.3.2 Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", upon request by the user to terminate shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

References

TS 24.007 clause 6.2.2, TS 24.008 clause 5.4.3.

10.1.3.5.3.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", upon request by the user to terminate will send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.5.3.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services;

- MT circuit switched basic services for which immediate connect is not used.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/2.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8 (if the UE uses immediate connection for the selected basic service then p = Y, otherwise p = N). Then the user requests termination of the call. The UE sends a DISCONNECT message and enters state U11, disconnect request. The SS verifies by using the status enquiry procedure that the UE has entered the correct state.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
A1			Radio Bearer Setup Procedure	p = Y, See TS34.108
2				the user requests to clear the call
3	->		DISCONNECT	
4	<-		STATUS ENQUIRY	
5	->		STATUS	cause #30#, state U11

Specific message contents:

None.

10.1.3.5.3.5   Test requirements

After step 2 a CC entity of a UE in CC-state U8, "Connect Request", shall send a DISCONNECT message and enter the CC-state U11, "Disconnect Request".

10.1.3.5.4   Incoming call / U8 connect request / DISCONNECT received with in-band information

10.1.3.5.4.1   Definition

The call control entity of the UE being in the state, U8, a DISCONNECT message indicating availability of in band information is received by the UE.

10.1.3.5.4.2   Conformance requirement

A CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a DISCONNECT with progress indicator #8 shall enter CC-state U12, if the traffic channel is in speech mode. If the DTCH is not in speech mode, the UE shall send a RELEASE message and enter CC-state U19.

References

TS 24.008 clause 5.4.4 and clause 5.5.1.

10.1.3.5.4.3   Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a DISCONNECT with progress indicator #8 enters CC-state U12, if the traffic channel is in speech mode, and that the UE sends a RELEASE message and enters CC-state U19 if the DTCH is not in speech mode.

10.1.3.5.4.4   Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8. The SS sends a DISCONNECT message containing indication of in-band information availability to the UE. If channel mode is speech, the UE enters state U12, disconnect indication. If channel mode is not speech, the UE sends a RELEASE message and enters state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		DISCONNECT	(note)
A2	<-		STATUS ENQUIRY	DTCH in speech mode:
A3	->		STATUS	cause #30#, state U12
B2	->		RELEASE	DTCH is not in speech mode:
B3	<-		STATUS ENQUIRY	
B4	->		STATUS	cause #30#, state U19

Specific message contents:

NOTE: With a progress indicator indicating in-band information; Progress Indicator, Progress description #8.

10.1.3.5.4.5   Test requirements

After step 1 a CC entity of a UE in CC-state U8, "Connect Request", shall enter CC-state U12, if the traffic channel is in speech mode. If the DTCH is not in speech mode, the UE shall send a RELEASE message and enter CC-state U19.

10.1.3.5.5   Incoming call / U8 connect request / DISCONNECT received without in-band information

10.1.3.5.5.1   Definition

The call control entity of the UE being in the state, U8, a DISCONNECT message is received by the UE. The DISCONNECT message does not contain indication of in-band information availability.

10.1.3.5.5.2   Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a DISCONNECT without progress indicator, shall return a RELEASE message and enter the CC-state U19, "Release Request".

References

TS 24.008 clause 5.4.4 and clause 5.4.4.1.2.

10.1.3.5.5.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a DISCONNECT without progress indicator, returns a RELEASE message and enters the CC-state U19, "Release Request".

10.1.3.5.5.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/4.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8. The SS sends a DISCONNECT message not containing indication of in-band information availability to the UE. The UE shall respond with a RELEASE message. The SS checks by using the status enquiry procedure that the CC entity of the UE has entered the state U19, release request.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	DISCONNECT	(note)
2		->	RELEASE	
3		<-	STATUS ENQUIRY	
4		->	STATUS	cause #30#, state U19

Specific message contents:

NOTE: Without a progress indicator indicating in-band information.

10.1.3.5.5.5 Test requirements

After step 1 a CC entity of a UE in CC-state U8, "Connect Request", shall return a RELEASE message and enter the CC-state U19, "Release Request".

10.1.3.5.6 Incoming call / U8 connect request / RELEASE received

10.1.3.5.6.1 Definition

The call control entity of the UE being in the state, U8, a RELEASE message is received by the UE.

10.1.3.5.6.2   Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a RELEASE shall return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) On returning to the idle mode the UE shall release the MM-connection and the CC-entities relating to the seven mobile terminating transaction identifiers shall be in CC-state U0, "Null".

References

Conformance requirement 1:   TS 24.008 clause 5.4.4.

Conformance requirement 2:   TS 24.008 clause 4.5.3 and clause 5.5.3.2 and 8.3.1.

10.1.3.5.6.3   Test purpose

1) To verify that a CC entity of a UE in CC-state U8, "Connect Request", upon receipt of a RELEASE will return a RELEASE COMPLETE and enter the CC-state U0, "Null".

2) To verify that the UE on returning to the idle mode releases the MM-connection and that the CC-entities relating to the seven mobile terminating transaction identifiers are in CC-state U0, "Null".

10.1.3.5.6.4   Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8. The SS sends a RELEASE message. The UE responds with a RELEASE COMPLETE message. The SS checks by using the status enquiry procedure that the CC entity has entered state U0, null, with the relevant transaction identifiers.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1		<-	RELEASE	with cause "Normal, unspecified"
2		->	RELEASE COMPLETE	
3		<-	STATUS ENQUIRY	
4		->	RELEASE COMPLETE	cause #81# (invalid TI value)
5	SS			repeat steps 3-4 to cover all the transaction identifiers from 000...110
6		<-	RRC CONNECTION RELEASE	the main signalling link shall be released.
7		->	RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

None.

10.1.3.5.6.5 Test requirements

After step 1 a CC entity of a UE in CC-state U8, "Connect Request", shall return a RELEASE COMPLETE message.

After step 3 CC entities relating to all mobile originating transaction identifiers shall send RELEASE COMPLETE messages with cause value #81 (invalid TI value).

10.1.3.5.7 Incoming call / U8 connect request / lower layer failure

10.1.3.5.7.1 Definition

The call control entity of the UE being in the state, U8, a lower layer failure is accomplished at the UE and consequently, communication at layer 3 level with the peer entity is terminated.

10.1.3.5.7.2 Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", having detected a lower layer failure shall return to idle mode, the CC entity is in state U0, "Null".

References

TS 24.008 clause 4.5.2.3, clause 4.5.3 and clause 5.5.3.2, TS 25.331 clause 8.3.1 and clause 8.5.6.

10.1.3.5.7.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", having detected a lower layer failure returns to idle mode, the CC entity is in state U0, "Null".

10.1.3.5.7.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The UE is brought to the state U8. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE message as a response to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one and waits 60 s. The SS will check that the UE will not send any message during 60 s.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		SS modifies the scrambling code of DPCH for generating lower layer failure
2	->		CELL UPDATE	CCCH
3	<-		RRC CONNECTION RELEASE	CCCH
4		SS		SS re-modifies the scrambling code of DPCH to the original one.
5		SS		SS waits 60 s. UE shall send no message on the DCCH

Specific message contents:

None.

10.1.3.5.7.5 Test requirements

After step 4 the UE shall not send any message to the SS during 60 s.

10.1.3.5.8 Incoming call / U8 connect request / DTCH assignment

10.1.3.5.8.1 Definition

The call control entity of the UE being in the state, U8, a radio bearer establishment procedure is performed for traffic channel.

10.1.3.5.8.2 Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, shall stay in the CC-state U8.

References

TS 25.331 clause 8.2.1, TS 24.008 clause 5.2.2.7.

10.1.3.5.8.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", when a traffic channel is allocated by the network performing the radio bearer establishment procedure, stays in the CC-state U8.

10.1.3.5.8.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8. The SS sends a RADIO BEARER SETUP for traffic channel to the UE. The UE shall respond with a RADIO BEARER SETUP COMPLETE message. The SS verifies by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Radio Bearer Setup Procedure	DTCH, See TS34.108
2		<-	STATUS ENQUIRY	
3		->	STATUS	cause #30#, state U8

Specific message contents:

None.

10.1.3.5.8.5 Test requirements

After step 1 the CC-state U8, "Connect Request", shall remain unchanged.

10.1.3.5.9 Incoming call / U8 connect request / unknown message received

10.1.3.5.9.1 Definition

The call control entity of the UE being in the state, U8, an unknown message is received by the UE.

10.1.3.5.9.2 Conformance requirement

1) A CC entity of a UE in CC-state U8, "Connect Request", having received an unknown message from its peer entity shall return a STATUS message.

References

TS 24.008 clause 8.4.

10.1.3.5.9.3 Test purpose

To verify that a CC entity of a UE in CC-state U8, "Connect Request", having received an unknown message from its peer entity returns a STATUS message.

10.1.3.5.9.4 Method of test

Related ICS/IXIT statements

- supported MT circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U8 by using table 10.1.3/1.

Test procedure

An MT circuit switched basic service is selected that is supported by the UE; if the UE supports MT telephony, the selected basic service is telephony. If necessary the UE is configured for that basic service. Then a mobile terminated call is initiated. The CC entity of the UE is brought to the state U8. The SS sends a message with message type not defined for the protocol discriminator to the UE. The UE shall respond with a STATUS message, and finally the SS checks by using the status enquiry procedure that the state of the CC entity has remained unchanged.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	unknown message	message type not defined for PD
2	->		STATUS	cause #97#, state U8
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U8

Specific message contents:

None.

10.1.3.5.9.5   Test requirements

After step 1 a CC entity of a UE in CC-state U8, "Connect Request", shall return a STATUS message.

10.1.4   In call functions

10.1.4.1   In-call functions / DTMF information transfer

10.1.4.1.1   In-call functions / DTMF information transfer / basic procedures

10.1.4.1.1.1   Definition

Dual Tone Multi Frequency (DTMF) is an inband one out of four plus one out of four signalling system primarily used from terminal instruments in telecommunication networks.

10.1.4.1.1.2   Conformance requirement

1) An UE supporting the Mobile originating DTMF protocol control procedure, having a CC entity for speech in state U10, "Active": when made to send a DTMF tone, shall send a START DTMF message on the correct DCCH.

2) An UE supporting the Mobile originating DTMF protocol control procedure, having a CC entity for speech in state U10, "Active": when made to send a DTMF tone (the corresponding IA5 character being selected from among the ones supported), shall send a START DTMF message specifying the correct IA5 character in the "keypad information" field of the keypad facility information element.

References

TS 24.008 clause 5.5.7.

10.1.4.1.1.3   Test purpose

1) To verify that an UE supporting the Mobile originating DTMF protocol control procedure, having a CC entity for speech in state U10, "Active": when made to send a DTMF tone, sends a START DTMF message on the correct DCCH.

2) To verify that an UE supporting the Mobile originating DTMF protocol control procedure, having a CC entity for speech in state U10, "Active": when made to send a DTMF tone (the corresponding IA5 character being selected from among the ones supported), sends a START DTMF message specifying the correct IA5 character in the "keypad information" field of the keypad facility information element.

10.1.4.1.1.4 Method of test

Related ICS/IXIT statements

- supported teleservices;

- supported character set (e.g. 0-9, #, *, A, B, C, D);

- if and how DTMF tone is indicated to the user.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 "Active" for speech by using Generic call setup procedure for mobile originating circuit switched call defined in TS 34.108.

Test procedure

The UE being in the call active state, a user causes a DTMF tone to be generated e.g. by depression of a key in the UE. A DTMF digit corresponding to the digit indicated by the user is sent in a START DTMF message by the UE. The SS will return a START DTMF ACKNOWLEDGE message to the UE. This acknowledgement may be used in the UE to generate an indication as a feedback for a successful transmission. Then the user indicates that the DTMF sending should cease e.g. by releasing the key. The UE will send a STOP DTMF message to the network which is acknowledged with STOP DTMF ACKNOWLEDGE by the SS.

The sequence described above is repeated for each of the applicable characters 0-9, #, *, A, B, C, and D.

Then a case of rejecting a DTMF tone is tested and the state of the UE is verified.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			Request the user to cause a DTMF tone to be generated
		->	START DTMF	the SS will verify that the transmitted information corresponds to the digit pressed
2	<-		START DTMF ACKNOWLEDGE	possible indication of a DTMF tone depending the ICS/IXIT statements
3	<-		STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10
5	->		STOP DTMF	
6	<-		STOP DTMF ACKNOWLEDGE	the DTMF tone indication shall be stopped
7				the steps 1-6 shall be repeated for each of the applicable characters 0-9, #, *, A, B, C, D.
8	<-		STATUS ENQUIRY	
9	->		STATUS	cause #30#, state U10
10	SS			Request the user to cause a DTMF tone to be generated.
11	->		START DTMF	
12	<-		START DTMF REJECT	
13	<-		STATUS ENQUIRY	
14	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.4.1.1.5 Test requirements

Upon a user making to send a DTMF tone a CC entity for speech in the CC state U10, "Active", shall send a START DTMF message on the DCCH to SS.

The SS will verify that the transmitted information corresponds to the digit pressed in the UE.

After step 7 (successful DTMF transmission) the CC-state U10, "Active", shall remain unchanged.

After step 11 (unsuccessful DTMF transmission) the CC-state U10, "Active", shall remain unchanged.

10.1.4.2 In-call functions / user notification

User notification procedure allows the network to notify a UE of any call-related event during the "active" state of a call. It also may allow a UE to notify the remote user of any appropriate call-related event during the "active" state of a call by sending a NOTIFY message containing a notification indicator to the network. No state change occurs at any of the interface sides during this procedure.

10.1.4.2.1 In-call functions / User notification / UE terminated

10.1.4.2.1.1 Definition

This is a case for testing user notification procedure terminated by the user equipment.

10.1.4.2.1.2 Conformance requirement

1) A CC entity of a UE in CC-state U10, "active", upon receiving of a NOTIFY message shall remain in the active state.

References

TS 24.008 clause 5.3.1.

10.1.4.2.1.3   Test purpose

To verify that a CC entity of a UE in CC-state U10, "active", upon receiving of a NOTIFY message remains in the active state.

10.1.4.2.1.4   Method of test

Related ICS/IXIT statements

-    supported circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 "Active" by using Generic call setup procedure for mobile originating circuit switched calls defined in TS 34.108.

Test procedure

The UE being in the call active state, the SS will send a NOTIFY message to the UE. The state of the UE is checked after that.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<-		NOTIFY	
2	<-		STATUS ENQUIRY	
3	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.4.2.1.5   Test requirements

After step 1 a CC entity of the UE in the CC-state U10, "active", shall remain in the active state.

10.1.4.3   In-call functions / channel changes

The two following test cases are for testing some elementary radio resource level procedures during an active state of a call to ensure call maintenance also during Hard handover.

10.1.4.3.1   In-call functions / channel changes / a successful channel change in active state/ Hard handover

10.1.4.3.1.1   Definition

This is a case to test a change of the frequency of a physical channel during active state of a call.

10.1.4.3.1.2 Conformance requirement

1) The UE being in the call active state after having successful completed a physical channel reconfiguration, shall remain in the call active state.

References

TS 24.008 clause 5.3.4.3.2, TS 25.331 clause 8.3.5.

10.1.4.3.1.3 Test purpose

To verify that the UE being in the call active state after having successful completed a physical channel reconfiguration remains in the call active state.

10.1.4.3.1.4 Method of test

Related ICS/IXIT statements

- supported circuit switched basic services;

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 "Active" by using Generic call setup procedure for mobile originating circuit switched calls defined in TS 34.108.

Test procedure

The UE being in the call active state, the SS initiated physical channel reconfiguration procedure causing an intracell change of channel by sending a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The UE performs physical channel reconfiguration procedure and after the main signalling link is successfully established, the UE returns a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. The state of the UE is then checked.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	PHYSICAL CHANNEL RECONFIGURATION	
2	->		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10

Specific message contents:

None.

10.1.4.3.1.5 Test requirements

The UE being in the call active state after having successful completed a physical channel reconfiguration, shall remain in the call active state.

10.1.4.3.2 In-call functions / channel changes / an unsuccessful channel change in active mode/Hard handover

10.1.4.3.2.1 Definition

This is a case to test an unsuccessful change of the frequency of a physical channel during active state of a call.

10.1.4.3.2.2 Conformance requirement

1) The UE, when returning to the old channel after physical channel reconfiguration failure, shall remain in the call active state.

References

TS 24.008 clause 5.3.4.3.

10.1.4.3.2.3 Test purpose

To verify that the UE, when returning to the old channel after physical channel reconfiguration failure, will remain in the call active state.

10.1.4.3.2.4 Method of test

Related ICS/IXIT statements

- supported circuit switched basic services.

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

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

The UE is brought into the state U10 "Active" by using Generic call setup procedure for mobile originating circuit switched calls defined in TS 34.108.

Test procedure

The SS sends a PHYSICAL CHANNEL RECONFIGURATION message, but does not activate the assigned physical channel. The UE shall attempt try to activate the new channel (this is not verified) and shall then reactivate the "old" channel. The UE shall send a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and shall set the cause value in IE "failure cause" to "physical channel failure". The state of the UE is then checked.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<-	PHYSICAL CHANNEL RECONFIGURATION	The UE attempts and fails to re-configure the physical channel.
2	->		PHYSICAL CHANNEL RECONFIGURATION FAILURE	NOTE
3		<-	STATUS ENQUIRY	
4	->		STATUS	cause #30#, state U10

Specific message contents:

> NOTE: With the cause value "physical channel failure".

10.1.4.3.2.5 Test requirements

The UE being in the call active state after physical channel reconfiguration failure, shall remain in the call active state.

10.1.4.4 In-call functions / UE terminated in-call modification

10.1.4.4.1 In-call functions / UE terminated in-call modification / modify when new mode is not supported

This test is not applicable for R99.

10.1.4.5 In-call functions / UE originated in-call modification

10.1.4.5.1 In-call functions / UE originated in-call modification / a successful case of modifying

This test is not applicable for R99.

10.1.4.5.2 In-call functions / UE originated in-call modification / modify rejected

This test is not applicable for R99.

10.1.4.5.3 In-call functions / UE originated in-call modification / an abnormal case of acceptance

This test is not applicable for R99.

10.1.4.5.4 In-call functions / UE originated in-call modification / an abnormal case of rejection

This test is not applicable for R99.

10.1.4.5.5 In-call functions / UE originated in-call modification / time-out of timer T323

This test is not applicable for R99.

10.1.4.5.6 In-call functions / UE originated in-call modification / a successful channel change in state mobile originating modify

This test is not applicable for R99.

10.1.4.5.7 In-call functions / UE originated in-call modification / an unsuccessful channel change in state mobile originating modify

This test is not applicable for R99.

10.1.4.5.8 In-call functions / UE originated in-call modification / unknown message received

This test is not applicable for R99.

10.1.4.5.9 In-call functions / UE originated in-call modification / a release complete received

This test is not applicable for R99.

10.2 Call Re-establishment

10.2.1 Call Re-establishment/call present, re-establishment allowed

10.2.1.1 Definition

This is to test a successful case of a call re-establishment procedure.

10.2.1.2 Conformance requirement

1) If the call is in the "active" state or "mobile originating modify" state, the indication from MM that re-establishment is possible shall cause call control to request re-establishment from the MM-connection, suspend any further message to be sent and await the completion of the re-establishment procedure.

2) When the call control entity is notified that the MM-connection is re-established, it shall then resume the transmission of possibly suspended messages and resume user data exchange when an appropriate channel is available.

References

1) TS 24.008 clauses 4.5.1.6 and 5.5.4.2, TS 25.331 clause 8.3.1 and clause 8.5.6.

2) TS 24.008 clauses 4.5.1.6 and 5.5.4.3.

10.2.1.3 Test purpose

The purpose of this test is to verify that the UE can correctly perform a call re-establishment procedure.

10.2.1.4 Method of test

Related ICS/IXIT statements

- supported teleservices.

Initial conditions

System Simulator:

1cell, default parameters

User Equipment:

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

Test procedure

The UE is brought into the state U10 "Active" by using Generic call setup procedure for mobile originating circuit switched calls defined in TS34.108. The SS modifies the scrambling code of downlink transmission (DL DPCH) to generate a lower layer failure at the UE. The SS waits long enough to enable the UE to perform cell update procedure. The SS sends RRC CONNECTION RELEASE as a response message to the CELL UPDATE message from the UE. The SS re-modifies the scrambling code of downlink transmission (DL DPCH) to the original one. The UE shall re-establish the call using CM RE-ESTABLISHMENT message. The SS performs security mode control and radio bearer establishment procedures. The UE shall through-connect the appropriate bearer channel. Then, the call is cleared by the SS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				The UE is brought into the state U10 "Active" by using Generic call setup procedure for mobile originating circuit switched calls defined in TS34.108 (the appropriate bearer channel is through connected in both directions in DTCH)
2		SS		SS modifies the scrambling code of DPCH for generating lower layer failure.
3	->		CELL UPDATE	CCCH
4	<-		RRC CONNECTION RELEASE	CCCH
5		SS		SS re-modifies the scrambling code of DPCH to the original one.
6	->		RRC CONNECTION REQUEST	
7	<-		RRC CONNECTION SETUP	
8	->		RRC CONNECTION SETUP COMPLETE	
9	->		CM REESTABLISHMENT REQUEST	note specific message contents
10	<-		SECURITY MODE COMMAND	
11	->		SECURITY MODE COMPLETE	
12			Radio Bearer Setup Procedure	See TS34.108
13	UE			The appropriate bearer channel is through connected in both directions.
14	<-		DISCONNECT	with cause value "Normal"
15	->		RELEASE	
16	<-		RELEASE COMPLETE	
17	<-		RRC CONNECTION RELEASE	
18	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

CM RE-ESTABLISHMENT REQUEST message contains Ciphering key sequence number IE with the value which the UE was allocated in .

10.2.1.5 Test requirements

After step 2 a CC entity of the UE in the "active" state, shall suspend any further message to be sent and await the completion of the re-establishment procedure.

After step 12 the UE resume user data exchange when an appropriate channel is available.

10.3 User to user signalling

10.3.1 Definition

The "user to user" information element is used to convey information between the mobile user and a remote ISDN user.

> NOTE: There is no test for an UE originating call including a "user-user" information element since it is not a mandatory UE feature.

10.3.2 Conformance requirement

The inclusion of the "user-user" information element in downlink call control messages shall cause no adverse effects on the operation of the UE.

References

TS 24.008 clauses 5.2.2, 9.3.7, 9.3.23.1 and 10.5.4.25.

10.3.3 Purpose of the test

The purpose of this test is to verify that inclusion of the "user-user" information element in either of the down link messages, SETUP or DISCONNECT causes no adverse effects on the operation of the UE.

10.3.4 Method of test

Related ICS/IXIT statement(s)

- Supported MT circuit switched basic services.

- Support of user-user information element, and details of suitable codings.

Initial conditions.

System Simulator:

The SS simulates 1 cell, with default parameters.

User Equipment:

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

Test procedure

The SS attempts to set up a mobile terminated call, with one of the supported circuit switched basic services which has been arbitrarily chosen, the generic call set up procedures for mobile terminating circuit switched calls,(either speech or data) as specified in TS 34.108 clause 7. The default SETUP message contents are modified to include the user-user Information Element. The UE shall not respond adversely to the inclusion of the user-user information element.

After 30 s the SS sends a DISCONNECT message, again the UE shall not respond adversely to the inclusion of the user-user information element, but shall continue to clear down the call normally.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1				Generic Call Setup procedure for mobile terminating circuit switched calls defined in TS 34.108, depending on choice of Bearer Capability. The SETUP message contains the user-user IE, see Specific message contents.
2				The SS waits 30 s.
3	<-		DISCONNECT	Message contains the user-user IE, see Specific message contents
4	->		RELEASE	
5	<-		RELEASE COMPLETE	
6	<-		RRC CONNECTION RELEASE	
7	->		RRC CONNECTION RELEASE COMPLETE	

Specific message contents:

SETUP message contains user-user IE with the string coded in IA5 characters: for example "Call Setup".

DISCONNECT message contains user-user IE with the string coded in IA5 characters: for example "Call Disconnect". (The codings above are for example only. For the case of an UE which supports "user-user" signalling it may be necessary to add meaning to the data fields, see ICS/IXIT statement(s).)

NOTE: The codings above are for example only. For the case of an UE which supports "user-user" signalling it may be necessary to add meaning to the data fields, see ICS/IXIT statement(s).

10.3.5   Test requirements

The inclusion of the "user-user" information element in downlink call control messages shall cause no adverse effects on the operation of the UE.

CR-Form-v5.1

CHANGE REQUEST

⌘	**34.123-1**	CR **200**	⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Remove of TC 9.5.3 MM connection / establishment in non-security mode	
Source: ⌘	Nokia	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-05-13

Category: ⌘ **F**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	UE MM convay CM messages from network to UE CM only if security mode control prosedure is invoked. See 24.008

4.5.1.1 MM connection establishment initiated by the mobile station

In UMTS, an indication from the RR sublayer that the security mode control procedure is completed, or reception of a CM SERVICE ACCEPT message, shall be treated as a service acceptance indication by the mobile station. The procedures in clause 4.1.1.1.1 shall always have precedence over this clause.

In UMTS, during a MM connection establishment for all services, except for emergency call (see chapter 4.1.1.1.1), **the security mode control procedure with activation of integrity protection shall be invoked by the network** unless integrity protection is already started (see chapter 4.1.1.1.1).

And

4.1.1.1.1   Integrity Checking of Signalling Messages in the Mobile Station (UMTS only)

Except the messages listed below, no layer 3 signalling messages shall be processed by the receiving MM and GMM entities or forwarded to the CM entities, unless the security mode control procedure is activated for that domain.

… … …

    CC messages:

        - all CC messages, if the following two conditions apply: |

		- no other MM connection is established; and - the MM entity in the MS has received a CM SERVICE ACCEPT message with no ciphering or integrity protection applied as response to a CM SERVICE REQUEST message, with CM SERVICE TYPE set to 'Emergency call establishment' sent to the network.
Summary of change: ⌘	9.5.3 removed from 34.123-1	
Consequences if not approved: ⌘	34.123 is against 24.008 chapters 4.1.1.1.1 Integrity Checking of Signalling Messages in the Mobile Station (UMTS only) and 4.5.1.1 MM connection establishment initiated by the mobile station.	

Clauses affected: ⌘	TC removed			
Other specs affected: ⌘	☐ Other core specifications **X** Test specifications ☐ O&M Specifications	⌘		34.123-2
Other comments: ⌘	TC 9.5.3 belongs to 3GCF package 2 (T1S-020219) 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.

9.5.3 ~~Void~~MM connection / establishment in non-security mode

9.5.3.1 Definition

9.5.3.2 Conformance requirement

Upon reception of the CM SERVICE ACCEPT message, the UE shall send a CM message.

References

TS 24.008 clause 4.5.1.1.

9.5.3.3 Test purpose

To verify that the UE can correctly set up an MM connection in an originating CM connection establishment when security mode setting is not required.

9.5.3.4 Method of test

Initial conditions

- System Simulator:

  - 1 cell, default parameters.

- User Equipment:

  - the UE has a valid TMSI. It is "idle updated".

Related ICS/IXIT statements

None.

Test Procedure

A mobile originating CM connection is attempted. The MM connection is established without invoking the security mode setting procedure.

Then, the UE sends a CM message and the SS releases the RRC CONNECTION.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			A MO CM connection is attempted.
2	→		RRC CONNECTION REQUEST	
3	←		RRC CONNECTION SETUP	
4	→		RRC CONNECTION SETUP COMPLETE	
5	→		CM SERVICE REQUEST	
6	←		CM SERVICE ACCEPT	
A7	→		SETUP	
B7	→		REGISTER	
C7	→		CP-DATA	
C8	←		CP-ACK	
C9	←		CP-DATA	
C10	→		CP-ACK	
11	←		RRC CONNECTION RELEASE	After the sending of this message, the SS waits for the disconnection of the main signalling link.
12	→		RRC CONNECTION RELEASE COMPLETE	

Specific message contents

None.

9.5.3.5　　　　　Test requirement

At step 5 the UE shall send the CM SERVICE REQUEST message to the SS.

At step A7 or B7 or C7 the UE shall send a CM message and the SS shall release the RRC connection (step 12).

CR-Form-v4

CHANGE REQUEST

⌘ **34.123-1 CR 204** ⌘ 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction of abbreviations reference	
Source: ⌘	Siemens	
Work item code: ⌘	TEI	***Date:*** ⌘
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: ⌘	Incorrect reference in the specification 34.123-1 clause 3.2
Summary of change: ⌘	In the test specification 34.123-1 chapter 3.2 the specified abbreviations will be referenced to TR 25.905 The correct reference must be TR 21.905.
Consequences if not approved: ⌘	The user of TR 34.123-1 will not found the wrong referenced specification TR 25.905 because it doesn't exist.

Clauses affected: ⌘	3.2
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 apply, unless specified below:

example: text used to clarify abstract rules by applying them literally

3.2 Abbreviations

For the purposes of the present document, the abbreviations specified in TR 25.905 21.905 apply, with any additional abbreviations specified below:

SS   System Simulator

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

T1-020330

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020239r1

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** | **CR** | **205** | ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Corrections to clause 8.2 of TS 34.123-1	
Source: ⌘	MCI	
Work item code: ⌘	TEI	***Date:*** ⌘ 22 May 2002

Category: ⌘ **F**   ***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	1. Merge corrections that were approved in T1/SIG #22 meeting into this document. 2. In all subsequently received test cases in section 8.2, the RRC Transaction Identity needs to be same for both messages in step 1 and 2 to ensure that the correct test conditions are sustained. 3. Editorial.
Summary of change: ⌘	**New corrections** 1. In all subsequently received test cases in section 8.2, IE "RRC Transaction Identity" in both messages in step 1 and 2 are set to '0'. 2. In clause 8.2.~~1~~6.15, the IE "New C-RNTI" is removed from the FDD message because this IE is included in the default message already. 3. In clause 8.2.2.13, 8.2.3.12 and 8.2.4.13, 8.2.6.12, part of the title of the test cases have been changed from "Physical channel failure and reversion failure" to "Physical channel failure and cell re-selection". **Approved corrections in T1/SIG #22 meeting (highlighted in yellow)** From T1S-020135r1 – Correction to clause 8.3 of TS 34.123-1 (MCI) 1. Corrections of spelling errors.

2. In clause 8.1.1.2, 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 8.2.2.9, 8.2.2.13, 8.2.2.18, 8.2.3.8, 8.2.3.12, 8.2.4.9, 8.2.4.13, 8.2.4.17, 8.2.6.8.

3. According to the test procedure in clause 8.2.4.4, the state of the UE should be CELL_DCH after cell update procedure. Hence, IE "RRC State indicator" in CELL UPDATE CONFIRM message in step 4 is added and set to "CELL_DCH".

4. In clause 8.2.6.6, UE should transit from CELL_DCH to CELL_DCH in step 3. therefore the reference message in step is changed from "Packet to CELL_FACH from CELL_DCH in PS" to "Packet to CELL_DCH from CELL_DCH in PS".

5. In the message content of step 1 and 2 of clause 8.2.4.18, 8.2.4.19, 8.2.6.17 and 8.2.6.18, the IE "Secondary scrambling code" has been renamed IE "Scrambling code number".

6. In step 1 of clause 8.2.2.25, IE "Timer_poll_periodic" is missing in IE "Polling info" and IE "Timer_STATUS_periodic" is missing in IE "Downlink RLC status info". Both have been included and set to 'Not Present'.

From T1S-020141 – Correction to the setting of IE "UTRAN DRX cycle length coefficient" (ASUSTek)

1. 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".

| **Consequences if not approved:** | ⌘ | The test prose cannot test UE correctly. |

| **Clauses affected:** | ⌘ | |

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

| **Other comments:** | ⌘ | Affects R'99 and R'4 UE test cases. |

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

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

8.2 Radio Bearer control procedure

8.2.1 Radio Bearer Establishment

8.2.1.2 Void

8.2.1.3 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Failure (Unsupported configuration)

8.2.1.3.1 Definition

8.2.1.3.2 Conformance requirement

The UE shall keep its current configuration when the UE receives a RADIO BEARER SETUP message which includes unsupported configuration parameters and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.3.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of receiving a RADIO BEARER SETUP message which includes parameters of its unsupported configuration.

8.2.1.3.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a RADIO BEARER SETUP message in which the frequency cannot be supported by the UE. After the UE receives this message, it transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	Including the unsupported configuration for the UE.
2	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.

Specific Message Contents

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108 with the following exceptions:

RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info	
CHOICE mode	FDD
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info	
CHOICE mode	TDD
- UARFCN (Nt)	0

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Configuration unsupported

8.2.1.3.5 Test requirement

After step 1 the UE transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

8.2.1.4 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

8.2.1.4.1 Definition

8.2.1.4.2 Conformance requirement

The UE shall revert to the old configuration when the UE fails to configure the new radio bearer before T312 expires and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.4.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the radio bearer according to the RADIO BEARER RECONFIGURATION message before timer T312 expires.

8.2.1.4.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a RADIO BEARER SETUP message to the UE and SS keep its old dedicated channel configuration. Then after T312 expiry, the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	The SS keeps its old L1 configuration after transmitting this message.
2				The UE does not configure the new radio access bearer and reverts to the old configuration.
3	→		RADIO BEARER SETUP FAILURE	UE shall transmit this message using the old configuration.

Specific Message Contents

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" as found in annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108.

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.1.4.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

8.2.1.5 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Failure (Physical channel Failure and reversion failure)

8.2.1.5.1 Definition

8.2.1.5.2 Conformance requirement

The UE shall perform a cell update procedure when the UE fails to revert to the old configuration after the detection of physical channel failure in the radio bearer establishment procedure. After the UE complete cell update procedure, the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.5.3 Test purpose

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

8.2.1.5.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_DCH state. SS transmits a RADIO BEARER SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure its dedicated physical channel in accordance with the settings in the message and release the old configuration after the RLC acknowledgement. The UE recognizes that it cannot synchronise on the new physical channel and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value of IE "failure cause" to "physical channel failure".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2				The SS does not configure new radio access bearer and shall release the configuration.
3	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
4	←		CELL UPDATE CONFIRM	This message includes IE "Physical channel information elements".
5				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	→		RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108.

CELL UPDATE (Step 3)

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	"radio link failure"

CELL UPDATE CONFIRM (Step 4) (FDD)

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

Information Element	Value/remark
RRC State indicator	CELL_DCH
UplinkDPCH Info	Same as RRC CONNECTION SETUP message used to move to initial condition
Downlink information for each radio links	Same as RRC CONNECTION SETUP message used to move to initial condition

CELL UPDATE CONFIRM (Step 4) (TDD)

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

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

RADIO BEARER SETUP FAILURE (Step 7)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

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

8.2.1.5.5 Test requirement

After step 2 the UE shall transmit CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.1.6 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.1.6.1 Definition

8.2.1.6.2 Conformance requirement

If the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP message, it shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC

Reference

3GPP TS 25.331 clause 8.2.1, clause 8.6.3.11.

8.2.1.6.3   Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP, it shall keep its configuration as if the RADIO BEARER SETUP message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.1.6.4   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 RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER SETUP message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER SETUP message, the UE shall keep its current configuration as if it had not received the RADIO BEARER SETUP message and shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters upon the specified activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	Including IE "Activation Time"
2		←	RADIO BEARER SETUP	The SS send this message before the expiry of activation time specified in the message of step 1.
3	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration according to the RADIO BEARER SETUP message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

For RADIO BEARER RECONFIGURATION message in step 1, use the message sub-type indicated as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the exception of the following Information Elements:

Information Element	Value/remark
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
Uplink DPCH Info - Scrambling code number	1

RADIO BEARER SETUP (Step 2)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Non-speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Activation Time	Not Present
Uplink DPCH Info - Scrambling code number	2

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure case	Incompatible simultaneous reconfiguration

8.2.1.6.5 Test requirement

After step 2 the UE shall keep its configuration as if the UE had not received the RADIO BEARER SETUP message and shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.1.7 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.1.7.1 Definition

8.2.1.7.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER SETUP message, which does not includes any IEs except IE "Message Type". Then it transmits a RADIO BEARER SETUP FAILURE message which is set to "protocol error" in IE "failure cause" and is set to "ASN.1 violation or encoding error" in IE "Protocol error cause".

The UE shall keep existing configuration upon reception of a RADIO BEARER SETUP message which includes some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER SETUP FAILURE message including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.7.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER SETUP message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER SETUP message including some IEs set to give an invalid configuration.

8.2.1.7.4 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. The SS transmits an invalid RADIO BEARER SETUP message to the UE which does not includes any IEs except IE "Message Type". The UE keeps the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause", and is set to "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE keeps current configuration after SS transmits a RADIO BEARER SETUP message including some IEs set to give an invalid configuration. Then UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	See specific message content.
2	→		RADIO BEARER SETUP FAILURE	The UE does not change its configuration.
3		←	RADIO BEARER SETUP	This message includes IE set to invalid value.
4	→		RADIO BEARER SETUP FAILURE	The UE does not change its configuration.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER SETUP FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error
Other information element	Not checked

RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical as "Non-speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108 with the following exceptions:

RADIO BEARER SETUP (Step 3) (FDD)

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER SETUP (Step 3) (TDD)

Information Element	Value/remark
-PRACH TFCS	Present

RADIO BEARER SETUP FAILURE (Step 5)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration

8.2.1.7.5 Test requirement

After step 1 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "protocol error" in IE "failure cause" and set to "ASN.1 violation or enoding error" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

8.2.1.11 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Unsupported configuration)

8.2.1.11.1 Definition

8.2.1.11.2 Conformance requirement

The UE shall keep its old configuration when the UE receives a RADIO BEARER SETUP message which includes an unsupported configuration and then transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, which sets value "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.11.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message in case of it receiving a RADIO BEARER SETUP message, which includes parameters of an unsupported configuration.

8.2.1.11.4 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. The SS transmits a RADIO BEARER SETUP message with a stated frequency that cannot be supported by the UE. After the UE receives this message, it shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC setting value "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER SETUP	This message includes an unsupported configuration for the UE.
2		→	RADIO BEARER SETUP FAILURE	The UE shall transmit this message using RLC-AM mode and do not change the current configuration.

Specific Message Contents

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

RADIO BEARER SETUP (FDD)

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

RADIO BEARER SETUP (TDD)

Information Element	Value/remark
Frequency info	
- CHOICE mode	TDD
- UARFCN (Nt)	0

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Configuration unsupported

8.2.1.11.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

8.2.1.12 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Physical channel Failure and successful reversion to old configuration)

8.2.1.12.1 Definition

8.2.1.12.2 Conformance requirement

The UE shall attempt to revert to the old configuration when the UE fails to configure the new radio bearer before T312 expires and detects the same serving cell only. It shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC containing value "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.12.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER SETUP FAILURE message when the UE fails to configure the new radio bearer after it detects physical channel failure, followed by the T312 expiry.

8.2.1.12.4 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. The SS transmits a RADIO BEARER SETUP message to the UE and keeps its old physical channel configuration. After T312 expiry, the UE shall perform cell reselection procedure and detect the same serving cell only. Then the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. The content of the message shall indicate "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	The SS keep its old configuration.
2	→		RADIO BEARER SETUP FAILURE	The UE does not configure a new radio bearer and reverts to the old configuration.

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.

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure

8.2.1.12.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

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

8.2.1.13.1 Definition

8.2.1.13.2 Conformance requirement

The UE shall perform a cell update procedure when the UE selects another cell after the detection of physical channel failure in the radio bearer establishment procedure. After the UE completes cell update procedure, the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.13.3 Test purpose

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

8.2.1.13.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.1.13

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPICH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.1.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies reverse of the transmission power settings for cell 1 and cell 2.

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

Expected sequence

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

Specific Message Contents

RADIO BEARER SETUP (Step 1)

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

CELL UPDATE (Step 5)

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	"cell reselection"

CELL UPDATE CONFIRM (Step 6)

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

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

RADIO BEARER SETUP FAILURE (Step 8)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

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

8.2.1.13.5 Test requirement

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

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

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

8.2.1.14 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.1.14.1 Definition

8.2.1.14.2 Conformance requirement

If the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP message, it shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1, clause 8.6.3.11.

8.2.1.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER SETUP, it shall keep its configuration as if the RADIO BEARER SETUP message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.1.14.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER SETUP message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER SETUP message, the UE shall keep its current configuration as if it had not received the RADIO BEARER SETUP message and shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER SETUP FAILURE

message, the UE reconfigures the new physical channel parameters upon the specified activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Activation Time "
2	←		RADIO BEARER SETUP	The SS send this message before the expiry of activation time specified in the message of step 1.
3	→		RADIO BEAER SETUP FAILURE	The UE does not change the configuration because of the RADIO BEARER SETUP message, and transmit this message on its uplink DCCH using the same RLC-AM mode radio bearer before step 1.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH Info - Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case are identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Current CFN-[current CFN mod 8 + 8] Assigned in step 1

RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not present
Uplink DPCH Info - Scrambling code number	2

RADIO BEARER SETUP (for Step 2) (TDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in the default message content. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

RADIO BEARER SETUP FAILURE

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration

8.2.1.14.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall configure the new configuration on the activation time and transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.1.15 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.1.15.1 Definition

8.2.1.15.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER SETUP message, which does not includes any IEs except IE "Message Type". It shall transmit a RADIO BEARER SETUP FAILURE message which set value "protocol error" in IE "failure cause" and also value "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep the old configuration upon reception of a RADIO BEARER SETUP message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER SETUP FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.1.

8.2.1.15.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER SETUP messagewhich does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER SETUP message including some IEs set to give an invalid configuration.

8.2.1.15.4 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. The SS transmits an invalid RADIO BEARER SETUP message to the UE which does not include all IEs except IE "Message Type". The UE keeps the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. This message shall specify "protocol error" in IE "failure cause" and also set the value "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE keeps current configuration after SS transmits RADIO BEARER SETUP message including some IEs set to give an invalid configuration. Then UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	See specific message content.
2	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.
3		←	RADIO BEARER SETUP	This message includes IE set to give an invalid conifguration.
4	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER SETUP FAILURE (Step 2)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

RADIO BEARER SETUP (Step 3) (FDD)

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER SETUP (Step 3) (TDD)

Information Element	Value/remark
-PRACH TFCS	Present

RADIO BEARER SETUP FAILURE (Step 4)

The contents of RADIO BEARER SETUP FAILURE message in this test case is the same as the RADIO BEARER SETUP FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.1.15.5 Test requirement

After step 1 the UE shall transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. The message shall indicate the reason of failure as "protocol error" in IE "failure cause" and set the value "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 3 the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value of IE "failure cause" to "invalid configuration".

8.2.1.16 Radio Bearer Establishment for transition from CELL_FACH to CELL_FACH: Success

8.2.1.16.1 Definition

8.2.1.16.2 Conformance requirement

The UE shall correctly set up a radio access 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.

8.2.1.16.3 Test purpose

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

8.2.1.16.4 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 the test operator is being prompted to make an outgoing packet-switched call. The SS transmits a RADIO BEARER SETUP message to the UE. After the UE receives this message, it configures them and establishes a new radio access bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	The UE select PRACH and S-CCPCH using SIB5 or SIB6.

Specific Message Contents

RADIO BEARER SETUP

For this message, use the message sub-type entitled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A.

8.2.1.16.5 Test requirement

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

8.2.1.17 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: success (Subsequently received)

8.2.1.17.1 Definition

8.2.1.17.2 Conformance requirement

If the UE receives a RADIO BEARER SETUP message before the UE completes the configuration of the radio bearers according to the previous RADIO BEARER SETUP message, the UE shall ignore the new RADIO BEARER SETUP message and configure according to the previous RADIO BEARER SETUP message. Finally, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1, clause 8.6.3.11.

8.2.1.17.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE completes the configuration of the radio bearer according to a previous RADIO BEARER SETUP message, it ignores the new RADIO BEARER SETUP message and configures according to the previous RADIO BEARER SETUP message received.

8.2.1.17.4 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. SS transmits a RADIO BEARER SETUP message to the UE before the UE completes the configuration of the radio bearer according to the RADIO BEARER SETUP message prior to this new message. The UE ignores the new RADIO BEARER SETUP message and configures according to the former RADIO BEARER SETUP message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	The "Secondary scrambling code is set to "1" for FDD mode.
2	←		RADIO BEARER SETUP	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of step 1. For TDD the IE "Secondary scrambling code" is set to "2" and for TDD mode a different code combination to that used in step 11 is used.
3	→		RADIO BEARER SETUP COMPLETE	The UE ignores the RADIO BEARER SETUP message in step 2 and completes configuration according to the RADIO BEARER SETUP message in step 1.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- Secondary scrambling code	1

RADIO BEARER SETUP (Step 1) (TDD)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (Step 2) (FDD)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Secondary scrambling code	2

RADIO BEARER SETUP (Step 2) (TDD)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.1.17.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

8.2.1.18 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.1.18.1 Definition

8.2.1.18.2 Conformance requirement

If the UE receives a RADIO BEARER SETUP message before the UE completes the configuration of the radio bearers according to the previous RADIO BEARER SETUP message, the UE shall ignore the new RADIO BEARER SETUP message and configure according to the previous RADIO BEARER SETUP message. Finally, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1, clause 8.6.3.11.

8.2.1.18.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE completes the configuration of the radio bearer according to a previous RADIO BEARER SETUP message, it ignores the new RADIO BEARER SETUP message and configures according to the previous RADIO BEARER SETUP message received.

8.2.1.18.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER SETUP message, requesting the UE to setup radio bearers using DPCH physical channels. SS transmits another RADIO BEARER SETUP message before the activation time specified in the first message has lapsed. The UE ignores the new RADIO BEARER SETUP message and configures the radio bearers according to the former RADIO BEARER SETUP message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1	←		RADIO BEARER SETUP	The "Secondary scrambling code is set to "1" for FDD mode.
2	←		RADIO BEARER SETUP	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of step 1. For FDD mode the IE "Secondary scrambling code" is set to "2" and for TDD mode a different code combination to that used in step 1 1 is used.
3	→		RADIO BEARER SETUP COMPLETE	The UE ignores the RADIO BEARER SETUP message in step 2 and confirms configuration according to the RADIO BEARER SETUP message in step 1.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

Information element(s) to be changed are listed below:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- Secondary scrambling code	1

RADIO BEARER SETUP (Step 1) (TDD)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

RADIO BEARER SETUP (for Step 2) (FDD)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.
Information element(s) to be changed are listed below:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Secondary scrambling code	2

RADIO BEARER SETUP (Step 2) (TDD)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as "Non speech in CS" found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with the exception of the following:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.1.18.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC specified in step 1.

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER SETUP message in step 1.

8.2.1.19 Radio Bearer Establishment from CELL_DCH to CELL_PCH: Success

8.2.1.19.1 Definition

8.2.1.19.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_DCH state to CELL_PCH state according to the received 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.

8.2.1.19.3 Test purpose

To conform that the UE transmits a RADIO BEARER SETUP COMPLETE message and enters CELL_PCH state after it received a RADIO BEARER SETUP message for the transition from CELL_DCH to CELL_PCH from SS.

8.2.1.19.4 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. The SS transmits a RADIO BEARER SETUP message. The UE transmits RADIO BEARER SETUP COMPLETE message using AM RLC and enters CELL_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3				The UE is in CELL_PCH state.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

RADIO BEARER SETUP (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

8.2.1.19.5 Test requirement

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

After step 2, the UE shall enter CELL_PCH state.

8.2.1.20 Radio Bearer Establishment from CELL_DCH to URA_PCH: Success

8.2.1.20.1 Definition

8.2.1.20.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_DCH state to URA_PCH state according to the received 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.

8.2.1.20.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP COMPLETE message and enters URA_PCH state after it received a RADIO BEARER SETUP message for the transition from CELL_DCH to URA_PCH from SS.

8.2.1.20.4 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. The SS transmits a RADIO BEARER SETUP message. The UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC and enters URA_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3				The UE is in URA_PCH state.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

RADIO BEARER SETUP (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

8.2.1.20.5   Test requirement

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

After step 2, the UE shall enter URA_PCH state.

8.2.1.21   RRC connection establishment in CELL_DCH on another frequency

8.2.1.21.1   Definition

8.2.1.21.2   Conformance requirement

1. The UE shall, in the transmitted RRC CONNECTION REQUEST message:

   - set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

   - set the IE "Initial UE identity" to the value of the variable INITIAL_UE_IDENTITY;

- set the IE "Protocol error indicator" to the value of the variable PROTOCOL_ERROR_INDICATOR;

- include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 11.

2. The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL_UE_IDENTITY.

If the values are identical, the UE shall:

- perform the physical layer synchronization procedure

Reference

3GPP TS 25.331 clauses 8.3.1.3, 8.3.1.6

8.2.1.21.3 Test Purpose

To confirm that the UE manages to synchronize on another frequency when so required by UTRAN in the RRC CONNECTION SET UP message.

8.2.1.21.4 Method of test

Initial condition

System simulator: 2 cells – Cell 1 on UARFCN 1 and Cell 2 on UARFCN 2.

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial state shall be "Registered idle mode on CS/PS" (state 7).

Test procedure

The UE is initially in idle mode and is camping on cell 1. SIB 11 is broadcast in cell 1, and the parameters used are as specified below.

SS prompts the operator to make an outgoing call of a supported traffic class. The UE shall transmit an RRC CONNECTION REQUEST on the CCCH, and SS replies with the RRC CONNECTION SETUP, in which the IEs are set as described below. The UE shall send the RRC CONNECTION SETUP COMPLETE back to SS in cell 2 on the DPCH described in the RRC CONNECTION SET UP messsage received from the SS.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		RRC CONNECTION REQUEST	By outgoing call operation
2	←		RRC CONNECTION SETUP	
3				The UE configures the layer 2 and layer 1.
4	→		RRC CONNECTION SETUP COMPLETE	This message is sent to on the frequency indicated in the RRC CONNECTION SETUP message

Specific message content

All messages indicated below shall use the same content as described in the default message content, with the following exceptions:

System Information Block type 11

Information Element	Value/Remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- 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	256 chips
- 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	Not present
- Cell for measurement	Not present
- Intra-frequency measurement quantity	Not present
- Intra-frequency measurement for RACH reporting	
- SFN-SFN observed time difference	No report
- Reporting quantity	CPICH Ec/No
- Maximum number of reported cells on RACH	Current Cell
- Reporting information for state CELL_DCH	Not present

RRC CONNECTION REQUEST (Step 2)

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

Information Element	Value/remark
Measured results on RACH	Check that the Ec/No for the cell 1 is reported.

RRC CONNECTION SETUP (Step 3)

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

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	UARFCN uplink of cell 2
- UARFCN downlink(Nd)	UARFCN downlink of cell 2

8.2.1.21.5   Test requirement

In step 4, the UE shall send the RRC CONNECTION SETUP COMPLETE message on the frequency indicated in the RRC CONNECTION SETUP message.

8.2.2 Radio Bearer Reconfiguration

8.2.2.1 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success

8.2.2.1.1 Definition

8.2.2.1.2 Conformance requirement

The UE shall correctly reconfigure a radio bearer and L1 according to the RADIO BEARER RECONFIGURATION message, which specifies a hard handover to another UL scrambling code and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.1.3 Test purpose

To confirm that the UE reconfigures the radio bearers according to a RADIO BEARER RECONFIGURATION message, which indicates a hard handover to another UL scrambling code.

8.2.2.1.4 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 RECONFIGURATION message to the UE, which commands a hard handover in the same cell to a new UL scrambling code to be performed. The UE reconfigures the new physical channel and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1			Void	
2			Void	
3		←	RADIO BEARER RECONFIGURATION	UL scrambling code is modified.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Uplink DPCH Info	
- Scrambling code number	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

RADIO BEARER RECONFIGURATION (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark
Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

8.2.2.1.5 Test requirement

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the new DPCH after the specified activation time has expired.

8.2.2.2 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Failure (Unsupported configuration)

8.2.2.2.1 Definition

8.2.2.2.2 Conformance requirement

The UE shall keep its old configuration when the UE receives a RADIO BEARER RECONFIGURATION message which includes unsupported configuration parameters and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.2.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RECONFIGURATION message includes unsupported configuration parameters.

8.2.2.2.4 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 RECONFIGURATION message to the UE, which includes unsupported configuration parameters for the UE. The UE shall transmit a RADIO BEARER

RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	Including unsupported configuration by the UE
2	→		RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the radio bearer.

Specific Message Contents

RADIO BEARER RECONFIGURATION (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

RADIO BEARER RECONFIGURATION (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.2.2.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC with the value "configuration unsupported" set in IE "failure cause".

8.2.2.3 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion to old configuration)

8.2.2.3.1 Definition

8.2.2.3.2 Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the new physical channel before timer T312 expires. UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.3.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the radio bearer expires according to the RADIO BEARER RECONFIGURATION message before timer T312.

8.2.2.3.4 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 RECONFIGURATION message including the new radio bearer parameters to the UE but it keeps its current dedicated physical channel configuration. The UE shall revert to the old configuration. Then the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting value "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2				SS does not reconfigure L1.
3	→		RADIO BEARER RECONFIGURATION FAILURE	The UE shall detect a failure to reconfigure the new radio bearer, and send this message using the old radio bearer configuration.

Specific Message Contents

RADIO BEARER RECONFIGURATION

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A.

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.2.3.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC setting value "physical channel failure" in IE "failure cause".

8.2.2.4 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion failure)

8.2.2.4.1 Definition

8.2.2.4.2 Conformance requirement

The UE shall perform a cell update when the UE fails to revert to the old configuration after the detection of physical channel failure in the radio bearer reconfiguration procedure. After the UE completes cell update procedure, the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.4.3 Test purpose

To confirm that the UE transmits a RADIO BEARER SETUP FAILURE message after it completes a cell update procedure when the UE cannot reconfigure the new radio bearer and a subsequent failure to revert to the old configuration.

8.2.2.4.4 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 RECONFIGURATION message, which includes the new radio bearer parameters, to the UE. After the reception of the acknowledgement for the RADIO BEARER RECONFIGURATION message in SS, the SS shall not reconfigure dedicated physical channel in accordance with the settings in the message and release the previous configuration. The UE discovers that it cannot reconfigure the new radio bearer and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the dedicated physical channel in accordance with the RADIO BEARER RECONFIGURATION message and shall release the old configuration.
3	→		CELL UPDATE	The value "radio link failure" shall be set in IE "Cell update cause".
4				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
5		←	CELL UPDATE CONFIRM	This message include IE "Physical channel information elements".
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	→		RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER RECONFIGURATION message (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as as found in Annex A.

CELL UPDATE (Step 3)

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	"radio link failure"

CELL UPDATE CONFIRM (Step 5) (FDD)

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

Information Element	Value/remark
RRC State indicator	CELL_DCH
UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 5) (TDD)

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

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

RADIO BEARER RECONFIGURATION FAILURE (Step 7)

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, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.2.4.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.2.5 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.2.5.1 Definition

8.2.2.5.2 Conformance requirement

If the UE receives a RADIO BEARER RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RECONFIGURATION message, it shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.6.3.11.

8.2.2.5.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RECONFIGURATION, it shall keep its configuration as if the RADIO BEARER RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.2.5.4 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. The SS transmits a RADIO BEARER SETUP message to the UE. The SS transmits a RADIO BEARER RECONFIGURATION message before the "activation time" indicated in the RADIO BEARER SETUP message expires. When the UE receives the RADIO BEARER RECONFIGURATION message, the UE shall keep its current configuration as if it had not received the RADIO BEARER RECONFIGURATION message and shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters upon the specified activation time and transmits a RADIO BEARER SETUP COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	
2		←	RADIO BEARER RECONFIGURATION	Sent before the "activation time" in step 1 has elapsed
3	→		RADIO BEARER RECONFIGURATION FAILURE	The UE does not change its configuration according to the RADIO BEARER RECONFIGURATION message in step 2.
4	→		RADIO BEARER SETUP COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER SETUP (Step 1) (FDD)

For RADIO BEARER SETUP message in step 1, use the message sub-type indicated as "Non speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH Info - Scrambling code number	1

RADIO BEARER SETUP (Step 1) (TDD)

For RADIO BEARER SETUP message in step 1, use the message sub-type indicated as "Non speech in CS" as found in Annex A or the RADIO BEARER SETUP message as found in clause 9 of TS 34.108, with following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH timeslots and codes - First timeslot code list	Assigned by SS

RADIO BEARER RECONFIGURATION (Step 2)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to those in the default contents of layer 3 messages for RRC tests with the following exceptions as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with following exceptions:

Information Element	Value/remark
Activation Time	Not Present.
Uplink DPCH Info - Scrambling code number	2

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.2.5.5 Test requirement

After step 2, the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3, the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

8.2.2.6 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.2.6.1 Definition

8.2.2.6.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER RECONFIGURATION message, which does not includes any IEs except IE "Message Type". The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message which is set to "protocol error" in IE "failure cause" and is set to "ASN.1 violation or encoding error" in IE "Protocol error cause".

The UE shall keep existing configuration upon reception of a RADIO BEARER RECONFIGURATION message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.6.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGRATION FAILURE message on the DCCH using AM RLC, if it receives an invalid RADIO BEARER RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER RECONFIGURATION message including some IEs set to give an invalid configuration.

8.2.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH (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 an invalid RADIO BEARER RECONFIGURATION message to the UE which does not include any IEs except IE "Message Type". The UE keeps the old configuration and transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "protocol

error" in IE "failure cause" and is set to "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE keeps current configuration after SS transmits a RADIO BEARER RECONFIGURATION message including some IEs set to give an invalid configuration. Then UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	See specific message content.
2	→		RADIO BEARER RECONFIGRATION FAILURE	The UE does not change the configuration.
3		←	RADIO BEARER RECONFIGURATION	This message includes IE set to give an invalid configuration.
4	→		RADIO BEARER RECONFIGRATION FAILURE	The UE does not change the configuration.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER RECONFIGURATION FAILURE (Step 2)

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, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

RADIO BEARER RECONFIGURATION (Step 3) (FDD)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER RECONFIGURATION (Step 3) (TDD)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions:

Information Element	Value/remark
-PRACH TFCS	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, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.2.6.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGRATION FAILURE message on the DCCH using AM RLC stating the reason "protocol error" in IE "failure cause". The message shall contain the value "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

8.2.2.7 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success (Continue and stop)

8.2.2.7.1 Definition

8.2.2.7.2 Conformance requirement

If the IE "RB information to reconfigure" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

   …

-   if the IE "RB stop/continue" is included; and

    -   if the "RB identity" has a value greater than 2; and

        -   if the value of the IE "RB stop/continue" is "stop":

            -   configure the RLC entity for the radio bearer to stop;

            -   set the IE "RB started" in the variable ESTABLISHED_RABS to "stopped" for that radio bearer;

        -   if the value of the IE "RB stop/continue" is "continue":

            -   configure the RLC entity for the radio bearer to continue;

            -   set the IE "RB started" in the variable ESTABLISHED_RABS to "started" for that radio bearer;

Reference

3GPP TS 25.331 clause 8.2.2, 8.6.4.5.

8.2.2.7.3 Test purpose

To confirm that the UE reconfigures new radio bearer and stop the transmission and reception of the RLC entity belonging to the RB identity specified in the RADIO BEARER RECONFIGURATION message.

To confirm that the UE reconfigures new radio bearer and restart the transmission and reception of the RLC entity belonging to the RB identity specified in the RADIO BEARER RECONFIGURATION message.

8.2.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH+DTCH (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 RECONFIGURATION message including IE "RB stop/continue" set to "continue" for radio bearer with RB identity '3'. The UE reconfigures new radio bearer and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. Then, the SS transmits an IDENTITY REQUEST message using AM RLC, the UE responds a IDENTITY RESPONSE message. The SS transmits a RADIO BEARER RECONFIGURATION message including IE "RB stop/continue" set to "stop" for radio bearer with RB identity "3". The UE reconfigures new radio bearer and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. Then, the SS transmits a IDENTITY REQUEST message using AM RLC, the UE does not acknowledge this message and also does not respond with a IDENTITY RESPONSE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	This message include IE "RB stop/continue" set to "continue".
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3		←	IDENTITY REQUEST	
3a	→		IDENTITY RESPONSE	
4		←	RADIO BEARER RECONFIGURATION	This message include IE "RB stop/continue" set to "stop".
5	→		RADIO BEARER RECONFIGURATION COMPLETE	
6		←	IDENTITY REQUEST	
7	→			The SS shall not receive any data from the UE.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
RB information to reconfigure	
-RB identity	3
-RB stop/continue	"continue"

RADIO BEARER RECONFIGURATION (Step 4)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
RB information to reconfigure	
-RB identity	3
-RB stop/continue	"stop"

8.2.2.7.5 Test requirement

After step 3 the UE shall respond with a IDENTITY RESPONSE message.

After step 6 the UE shall not respond with a IDENTITY RESPONSE message on the stopped RB.

8.2.2.8 Radio Bearer Reconfiguration from CELL_DCH to CELL_FACH: Success

8.2.2.8.1 Definition

8.2.2.8.2 Conformance requirement

The UE shall correctly reconfigure radio bearers according to a RADIO BEARER RECONFIGURATION message, which invoke a transition from CELL_DCH to CELL_FACH in the same cell and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.8.3 Test purpose

To confirm that the UE establishes the reconfigured radio bearer(s) using common physical channel, after UE receives a RADIO BEARER RECONFIGURATION message.

8.2.2.8.4 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 RECONFIGURATION message, which invoke a transition from CELL_DCH to CELL_FACH. The UE reconfigures the radio bearers and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 and SIB6 after entering CELL FACH state.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exception:

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

8.2.2.8.5 Test requirement

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

8.2.2.9 Radio Bearer Reconfiguration from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.2.9.1 Definition

8.2.2.9.2 Conformance requirement

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

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.9.3 Test purpose

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

8.2.2.9.4 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 RECONFIGURATION message, which includes IE "Primary CPICH info" and no dedicated physical channel information to transit from CELL_DCH to CELL_FACH. As the UE cannot detect the specified cell, the UE shall initial the cell update procedure. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3	←		RADIO BEARER RECONFIGURATION	Assign a 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 CONFIRMVoid	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 3) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_FACH from CELL_DCH in PS" found in Annex A with the following exceptions:

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

RADIO BEARER RECONFIGURATION (Step 3) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_FACH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	4

CELL UPDATE (Step 4)

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

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

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked. CELL UPDATE CONFIRM (Step 5)

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

8.2.2.9.5 Test requirement

After step 3, the UE shall transmit CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection".

After step 5, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message and then followed by RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.10 Radio Bearer Reconfiguration: from CELL_FACH to CELL_DCH: Success

8.2.2.10.1 Definition

8.2.2.10.2 Conformance requirement

The UE shall correctly reconfigure radio bearers according to a RADIO BEARER RECONFIGURATION message, which invoke a transition from CELL_FACH to CELL_DCH in the same cell and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.10.3 Test purpose

To confirm that the UE reconfigures the radio bearers according to a RADIO BEARER RECONFIGURATION message.

8.2.2.10.4 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

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The UE reconfigures the radio bearers and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RECONFIGURATION	This message includes IE "Uplink DPCH Info"
2				Reconfiguration of radio bearer
3	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

8.2.2.10.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.11 Radio Bearer Reconfiguration from CELL_FACH to CELL_DCH: Failure (Unsupported configuration)

8.2.2.11.1 Definition

8.2.2.11.2 Conformance requirement

The UE shall keep its current configuration when the UE receives a RADIO BEARER RECONFIGURATION message which includes unsupported configuration parameters and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.11.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RECONFIGURATION message includes unsupported configuration parameters.

8.2.2.11.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes unsupported configuration parameters, to the UE. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC and set "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	The message includes an unsupported configuration for the UE
2	→		RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the radio bearer.

Specific Message Contents

RADIO BEARER RECONFIGURATION (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

RADIO BEARER RECONFIGURATION (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN (Nt)	0

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.2.11.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC stating "configuration unsupported" in IE "failure cause".

8.2.2.12 Radio Bearer Reconfiguration from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old configuration)

8.2.2.12.1 Definition

8.2.2.12.2 Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the new physical channel before timer T312 expires and detects the same serving cell only. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.12.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new radio bearer before timer T312 expires according to a RADIO BEARER RECONFIGURATION message.

8.2.2.12.4 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 in CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes the new radio bearer parameters, to the UE and keep its current physical channel channel configuration. Therefore, the UE cannot reconfigure the radio bearers and shall attempt cell reselection procedure after T312 expires. Then the UE shall detect the same serving cell only and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, with the value "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION FAILURE	The SS does not reconfigures L1 and the UE fails to reconfigure its radio bearers.

Specific Message Contents

RADIO BEARER RECONFIGURATION

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.2.12.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "physical channel failure" in IE "failure cause".

8.2.2.13 Radio Bearer Reconfiguration from CELL_FACH to CELL_DCH: Failure (Physical channel failure and ~~reversion failure~~cell re-selection)

8.2.2.13.1 Definition

8.2.2.13.2 Conformance requirement

The UE shall perform a cell update procedure when the UE selects another cell after the detection of physical channel failure in the radio bearer reconfiguration procedure. After the UE completes cell update procedure, the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.13.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message after it completes a cell update procedure due to a physical channel failure in the radio bearer reconfiguration procedure.

8.2.2.13.4 Method of test

Initial Condition

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

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1.

Test Procedure

Table 8.2.2.13

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
P-CCPCH RSCP (TDD)	dBm	-60	-75	switched off	-60

Table 8.2.2.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message, which includes the new radio bearer parameters, to the UE but SS does not reconfigure dedicated physical channel in accordance with the settings in the message. At the same time, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.2.13. The UE recognize that it cannot synchronize with the SS on the new radio bearers.The UE performs cell reselection and 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 a CELL UPDATE message. UE reply with UTRAN MOBILITY INFORMATION CONFIRM message. The UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the dedicated physical channel in accordance with the RADIO BEARER RECONFIGRATION message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.2.13.
3			Void	
4			Void	
5	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	See message content.
7	→		UTRAN MOBILITY INFORMATION CONFIRMVoid	
8	→		RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

CELL UPDATE (Step 5)

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
U-RNTI	
- SRNC Identity	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 6)

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

RADIO BEARER RECONFIGURATION FAILURE (Step 8)

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, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.2.13.5 Test requirement

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

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

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

8.2.2.14 Radio Bearer Reconfigure from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.2.14.1 Definition

8.2.2.14.2 Conformance requirement

If the UE receives a RADIO BEARER RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RECONFIGURATION message, it shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.6.3.11.

8.2.2.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RECONFIGURATION, it shall keep its configuration as if the RADIO BEARER RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.2.14.4 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_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER RECONFIGURATION message before the "activation time" indicated in the PHYSICAL CHANNEL RECONFIGURATION message expires. When the UE receives the RADIO BEARER RECONFIGUTARION message, the UE shall keep the configuration as if it had not received the RADIO BEARER RECONFIGURATION message and shall transmit a RADIO RECONFIGURATION SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters and transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	←		RADIO BEARER RECONFIGURATION	Sent before the elapse of the "Activation Time" indicated in the previous message.
3	→		RADIO BEARER RECONFIGURATION FAILURE	The UE does not change its configuration according to the RADIO BEARER RECONFIGURATION message.
4	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (FDD)

For PHYSICAL CHANNEL RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions.

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH Info	
- Scrambling code number	1

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (TDD)

For PHYSICAL CHANNEL RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions.

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

RADIO BEARER RECONFIGURATION (Step 2) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Not Present
Uplink DPCH Info	
- Scrambling code number	2

RADIO BEARER RECONFIGURATION (Step 2) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	
Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

RADIO BEARER RECONFIGURATION FAILURE

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.2.14.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.15 Radio Bearer Reconfiguration from CELL_FACH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.2.15.1 Definition

8.2.2.15.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER RECONFIGURATION message, which does not include any IEs except IE "Message Type". Then it shall transmit a RADIO BEARER RECONFIGURATION FAILURE message setting "protocol error" in IE "failure cause" and also setting "ASN.1 violation error or encoding error" in IE "Protocol error cause". The UE shall keep its current configuration upon reception of a RADIO BEARER RECONFIGURATION message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.15.3   Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER RECONFIGURATION message including some IEs set to give an invalid configuration.

8.2.2.15.4   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 an invalid RADIO BEARER RECONFIGURATION message to the UE which does not include all IEs except IE "Message Type". The UE shall keep the old configuration and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC indicating "protocol error" in IE "failure cause" and also set "ASN.1 violation error or encoding error" in IE "Protocol error cause". The UE keeps current configuration when SS transmits RADIO BEARER RECONFIGURATION message including some IEs set to give an invalid configuration. The UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RECONFIGURATION	See specific message content.
2	→		RADIO BEARER RECONFIGRATION FAILURE	The UE does not change the configuration.
3		←	RADIO BEARER RECONFIGURATION	This message includes IE set to invalid value
4	→		RADIO BEARER RECONFIGRATION FAILURE	The UE does not change the configuration

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER RECONFIGURATION FAILURE (Step 2)

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, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation error or encoding error

RADIO BEARER RECONFIGURATION (Step 3) (FDD)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER RECONFIGURATION (Step 3) (TDD)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

RADIO BEARER RECONFIGURATION FAILURE (Step 4)

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, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.2.15.5   Test requirement

After step 1 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, which includes the cause "protocol error" in IE "failure cause" and "ASN.1 violation error or encoding error" in IE "Protocol error cause".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

8.2.2.16   Void

8.2.2.17   Radio Bearer Reconfiguration from CELL_FACH to CELL_FACH: Success

8.2.2.17.1   Definition

8.2.2.17.2   Conformance requirement

The UE shall correctly reconfigure radio bearers and transit from CELL_FACH in the current cell to CELL_FACH in another cell according to a RADIO BEARER RECONFIGURATION message and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.17.3 Test purpose

To confirm that the UE establishes radio bearers according to a RADIO BEARER RECONFIGURATION message.

8.2.2.17.4 Method of test

Initial Condition

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

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1.

Test Procedure

Table 8.2.2.17

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 (TDD)	dBm	-60	-75	-75	-60

Table 8.2.2.17 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message, which invoke a transition from CELL_FACH in the current cell to CELL_FACH in cell 2, to the UE. The SS configures its downlink transmission power settings according to columns "T1" in table 8.2.2.17. The UE moves to cell 2 and configures the common physical channel and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.2.17.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions.

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

RADIO BEARER RECONFIGURATION (Step 1) (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 with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
-Cell parameters ID	4

8.2.2.17.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC in cell 2.

8.2.2.18 Radio Bearer Reconfiguration from CELL_FACH to CELL_FACH: Success (Cell re-selection)

8.2.2.18.1 Definition

8.2.2.18.2 Conformance requirement

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

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.18.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message in cell 2 after it completes a cell update procedure instigated by a RADIO BEARER RECONFIGURATION message.

8.2.2.18.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.2.18

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 (TDD)	dBm	-60	-75	-75	-60

Table 8.2.2.18 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. On transmitting a RADIO BEARER RECONFIGURATION message to the UE, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.2.18. 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. UE transmit a UTRAN MOBILTY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.1.9.
3			Void	
4	→		CELL UPDATE	The value "cell reselection" shall be set in IE "cell update cause".
5		←	CELL UPDATE CONFIRM	See message content.
6	→		UTRAN MOBILITY INFORMATION CONFIRMVoid	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CPICH info - Primary scrambling code	Not Present

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	Not present

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	"cell reselection"

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 5)

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

8.2.18.5 Test requirement

After step 2 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 RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.19 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success (Subsequently received)

8.2.2.19.1 Definition

8.2.2.19.2 Conformance requirement

If the UE receives a RADIO BEARER RECONFIGURATION message before the UE configures the radio bearers according to the previous RADIO BEARER RECONFIGURATION message, the UE shall ignore the new RADIO BEARER RECONFIGURATION message and configure according to the previous RADIO BEARER RECONFIGURATION message. Finally, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.6.3.11.

8.2.2.19.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a previous RADIO BEARER RECONFIGURATION message, it ignores the new RADIO BEARER RECONFIGURATION message and configures the radio bearer according to the previous RADIO BEARER RECONFIGURATION message received.

8.2.2.19.4 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. SS transmits a RADIO BEARER RECONFIGURATION message to the UE before the UE configures the radio bearer according to the RADIO BEARER RECONFIGURATION message prior to this new message. The UE ignores the new RADIO BEARER RECONFIGURATION message and configures according to the former RADIO BEARER RECONFIGURATION message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RECONFIGURATION	For FDD, the IE "Secondary scrambling code" is set to "1". For TDD, the code combination is assigned by SS.
2		←	RADIO BEARER RECONFIGURATION	Sent before the "activation time" in step 1 has elapsed. For FDD, the IE "Secondary scrambling code" is set to "2". For TDD the code combination assigned is different to that assigned in step 1.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE ignores the RADIO BEARER RECONFIGURATION message in step 2 and performs configuration according to the RADIO BEARER RECONFIGURATION message in step 1.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- Secondary scrambling code	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

RADIO BEARER RECONFIGURATION (Step 2) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Secondary scrambling code	2

RADIO BEARER RECONFIGURATION (Step 2) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

8.2.2.19.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.20 Radio Bearer Reconfigure from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.2.20.1 Definition

8.2.2.20.2 Conformance requirement

If the UE receives a RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to the previous RADIO BEARER RECONFIGURATION message, the UE shall ignore the new RADIO BEARER RECONFIGURATION message and configure according to the previous RADIO BEARER RECONFIGURATION message. Finally, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.6.3.11.

8.2.2.20.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a previous RADIO BEARER RECONFIGURATION message, it ignores the new RADIO BEARER RECONFIGURATION message and configures the radio bearer according to the previous RADIO BEARER RECONFIGURATION message received.

8.2.2.20.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. SS transmits a RADIO BEARER RECONFIGURATION message to the UE before the UE configures the radio bearer according to the RADIO BEARER RECONFIGURATION message prior to this new message. The UE ignores the new RADIO BEARER RECONFIGURATION message and configures the radio bearers according to the former RADIO BEARER RECONFIGURATION message. On completion of radio bearer configuration, the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	For FDD, the IE "Secondary scrambling code" is set to "1". For TDD, the code combination is assigned by SS.
1a (TDD)			A code combination is assigned for the SS.	
2		←	RADIO BEARER RECONFIGURATION	SS sends this message before the expiry of activation time specified in RADIO BEARER RECONFIGURATION message of step 1. For FDD, the IE "Secondary scrambling code" is set to "2". For TDD, the code combination assigned is different to that assigned in step 1.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE ignores the RADIO BEARER RECONFIGURATION message in step 2 and confirms configuration according to the RADIO BEARER RECONFIGURATION message in step 1.

Specific Message Contents

RADIO BEARER RECONFIGURATION (step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- Secondary scrambling code	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

RADIO BEARER RECONFIGURATION (Step 2) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Secondary scrambling code	2

RADIO BEARER RECONFIGURATION (Step 2) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

8.2.2.20.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.21 Radio Bearer Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.2.21.1 Definition

8.2.2.21.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_DCH state to CELL_PCH state according to the received RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.21.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message and enters CELL_PCH state after it receives a RADIO BEARER RECONFIGURATION, which invoke the UE to transit from CELL_DCH to CELL_PCH, from SS.

8.2.2.21.4 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 RECONFIGURATION message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enters 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 RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3				The UE is in CELL_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

RADIO BEARER RECONFIGURATION (Step 1) (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 with the following exceptions:

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

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.2.21.5 Test requirement

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

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

8.2.2.22 Radio Bearer Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.2.22.1 Definition

8.2.2.22.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_DCH state to URA_PCH state according to received RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.22.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION COMPLETE and enters URA_PCH state after it received a RADIO BEARER RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH, from SS.

8.2.2.22.4 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 RECONFIGURATION message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enters into URA_PCH state. The SS transmits a PAGING TYPE 1 message and the UE shall enters the CELL_FACH state after receiving this message. UE shall transmit a CELL UPDATE message with IE "Cell update cause" set to "paging response".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3				The UE is in URA_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

RADIO BEARER RECONFIGURATION (Step 1) (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 with the following exceptions:

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

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.2.22.5 Test requirement

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

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

8.2.2.23 Radio Bearer Reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.2.23.1 Definition

8.2.2.23.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_FACH state to CELL_PCH state according to the received RADIO BEARER RECONFIGURATION message and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.23.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE message and enters CELL_PCH state after it received a RADIO BEARER RECONFIGURATION message, which invoke the UE to transit from CELL_FACH to CELL_PCH.

8.2.2.33.4 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 RECONFIGURATION message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enters 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 RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3				The UE is in CELL_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

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

RADIO BEARER RECONFIGURATION (Step 1) (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 with the following exceptions:

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

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.2.23.5 Test requirement

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

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

8.2.2.24 Radio Bearer Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.2.24.1 Definition

8.2.2.24.2 Conformance requirement

The UE shall configure radio bearers so as to transit from CELL_FACH state to URA_PCH state according to the received RADIO BEARER RECONFIGURATION message and responds with a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.24.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message and enters URA_PCH state after it receives a RADIO BEARER RECONFIGURATION message, which invoke the UE to transit from CELL_FACH to URA_PCH.

8.2.2.24.4 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 RECONFIGURATION message. The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC and enters 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 RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	
3				The UE is in URA_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

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

RADIO BEARER RECONFIGURATION (Step 1) (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 with the following exceptions:

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

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.2.24.5   Test requirement

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

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

8.2.2.25 Radio Bearer Reconfiguration for transition from CELL_FACH to CELL_DCH including modification of previously signalled CELL_DCH configuration

8.2.2.25.1 Definition

8.2.2.25.2 Conformance requirement

Upon receiving a RADIO BEARER RECONFIGURATION message including a request to move to CELL_DCH, the UE shall apply a previously signalled configuration for CELL_DCH, modify the parameters for which reconfiguration was requested in the RADIO BEARER RECONFIGURATION message and transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

Reference

3GPP TS 25.331 clause 8.2.2.

8.2.2.25.3 Test purpose

To confirm that the UE applies a previously signalled configuration for CELL_DCH and in addition modifies the parameters for which reconfiguration is requested in the RADIO BEARER RECONFIGURATION message that is used to initiate transition from CELL_FACH to CELL_DCH.

8.2.2.25.4 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

a) The UE is in CELL_FACH state.

b) The SS transmits a RADIO BEARER RECONFIGURATION message including dedicated physical channel information to request the UE to transit from CELL_FACH to CELL_DCH. Upon receiving this message, the UE establishes the radio bearer and transport channel configuration for CELL_DCH included in a previous RADIO BEARER SETUP message and modifies the parameters for which reconfiguration was requested in the RADIO BEARER RECONFIGURATION message.

c) The UE transmits a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RECONFIGURATION	Initiates the transition from CELL_FACH to CELL_DCH
2	→		RADIO BEARER RECONFIGURATION COMPLETE	

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

The contents of RADIO BEARER RECONFIGURATION message is identical as "RADIO BEARER RECONFIGURATION message" as found in Annex A with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list	
- RB information to reconfigure	(AM DCCH for RRC)
- RB identity	2
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	No discard
- MAX_DAT	15
- Transmission window size	128
- Timer_RST	300
- Max_RST	1
- Polling info	
- Timer_poll	100
- Poll_SDU	1
- Last transmission PDU poll	TRUE
- Last retransmission PDU poll	TRUE
- Poll_Windows	99
- Timer_poll_periodic	Not Present
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Receiving window size	128
- Downlink RLC status info	
- Timer_status_prohibit	100
- Missing PDU indicator	TRUE
- Timer_STATUS_periodic	Not Present
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT High priority)
- RB identity	3
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Same as for RB identity 2
- RB mapping info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(AM DCCH for NAS_DT Low priority)
- RB identity	4
- PDCP info	Not Present
- PDCP SN info	Not Present
- RLC info	Same as for RB identity 2
- RB mapping info	Not Present
- RB stop/continue	Not Present

RADIO BEARER RECONFIGURATION COMPLETE (Step 2)

The contents of RADIO BEARER RECONFIGURATION COMPLETE message is identical as "RADIO BEARER RECONFIGURATION COMPLETE message" as found in Annex A.

8.2.2.25.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.3 Radio Bearer Release

8.2.3.2 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Failure (Unsupported configuration)

8.2.3.2.1 Definition

8.2.3.2.2 Conformance requirement

The UE shall keep its old configuration when the UE receives a RADIO BEARER RELEASE message which includes unsupported configuration parameters and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting value "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.2.3 Test purpose

To confirm that the UE keeps its current configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, if the received RADIO BEARER RELEASE message indicates an unsupported configuration parameters for the UE.

8.2.3.2.4 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 RELAESE message to the UE specifying a frequency which is not supported by the UE. The UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC indicating "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	Including unsupported configuration by the UE
2	→		RADIO BEARER RELEASE FAILURE	The UE does not change the radio bearer.

Specific Message Contents

RADIO BEARER RELEASE (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

RADIO BEARER RELEASE (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.3.2.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with the IE "failure cause" set to "configuration unsupported".

8.2.3.3 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion to old configuration)

8.2.3.3.1 Definition

8.2.3.3.2 Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the radio bearers by timer T312 expiry and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.3.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if the UE fails to release the radio bearer according to a RADIO BEARER RELEASE message by timer T312 expiry.

8.2.3.3.4 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 but it keeps its current dedicated physical channel configuration. This causes the UE to fail to release the radio bearer, and after T312 expires the UE reverts to the old configuration. The UE then transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which specifies "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RELEASE	
2				The SS keeps its current dedicated physical channel configuration.
3	→		RADIO BEARER RELEASE FAILURE	After T312 expires, the UE finds that it fails to release a radio bearer and reverts to the old configuration.

Specific Message Contents

RADIO BEARER RELEASE

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in annex A.

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.3.3.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which includes the value "physical channel failure" in IE "failure cause".

8.2.3.4 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion failure)

8.2.3.4.1 Definition

8.2.3.4.2 Conformance requirement

The UE shall perform a cell update procedure when the UE fails to revert to the old configuration after the detection of physical channel failure in the radio bearer release procedure. After the UE completes cell update procedure, the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.4.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message after it completes a cell update procedure when the UE cannot revert to the old configuration after encountering a physical channel failure during the execution of a radio bearer release procedure.

8.2.3.4.4 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 but does not configure dedicated physical channel in accordance with the settings in the message and release the previous configuration. As a result, the UE recognizes that it cannot reconfigure the radio bearers and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RELEASE	
2				The SS does not configure the dedicated physical channel in accordance with the RADIO BEARER RELEASE message and shall release the old configuration.
3	→		CELL UPDATE	This message includes the value "radio link failure" set in IE "Cell update cause".
4		←	CELL UPDATE CONFIRM	This message includes IE "Physical channel information elements".
5				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	→		RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER RELEASE

The contents of RADIO BEARER RELEASE message in this test case are identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A.

CELL UPDATE (Step 3)

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
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001'
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 4) (FDD)

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

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 4) (TDD)

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

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 3
RRC State indicator	CELL_DCH
UplinkDPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

RADIO BEARER RELEASE FAILURE (Step 7)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.3.4.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.3.5 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.3.5.1 Definition

8.2.3.5.2 Conformance requirement

If the UE receives a RADIO BEARER RELEASE message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RELEASE message, it shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3, clause 8.6.3.11.

8.2.3.5.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RELEASE message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RELEASE, it shall keep its configuration as if the RADIO BEARER RELEASE message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.3.5.4 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 RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER RELEASE message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER RELEASE message, the UE shall keep the configuration as if it had not received the RADIO BEARER RELEASE message and shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration".When the activation time lapses, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		←	RADIO BEARER RELEASE	Message sent before the "Activation time" indicated in the message of step 1 has elapsed.
3	→		RADIO BEARER RELEASE FAILURE	The UE does not change the configuration due to the reception of RADIO BEARER RELEASE message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]

Uplink DPCH info
    - Scrambling code number
Downlink information common for all radio links
    - Downlink DPCH info common for all RL
    - Timing Indicator
	1
	
	Maintain

RADIO BEARER RECONFIGURATION (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark

Uplink DPCH timeslots and codes
    - First timeslot code list
Downlink information common for all radio links
    - Downlink DPCH info common for all RL
    - Timing Indicator
	Assigned by SS
	
	Maintain

RADIO BEARER RELEASE (Step 2) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info Uplink DPCH Info - Scrambling code number	Current CFN-[current CFN mod 8 + 8] 2

RADIO BEARER RECONFIGURATION (Step 2) (TDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.3.5.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall trasmit a RADIO BEARER RECONFIGURATION COMPLETE message.

8.2.3.6 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.3.6.1 Definition

8.2.3.6.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER RELEASE message which does not include any IEs except IE "Message Type". It shall transmit a RADIO BEARER RELEASE FAILURE message which includes value "protocol error" in IE "failure cause" and value "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon reception of a RADIO BEARER RELEASE message, which include some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER RELEASE FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.6.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER RELEASE message, which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER RELEASE message including some IEs set to give an invalid configuration.

8.2.3.6.4 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 an invalid RADIO BEARER RELEASE message to the UE which does not any IEs except IE "Message Type". The UE keeps the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC. This message shall indicate "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits a RADIO BEARER RELEASE message including some IEs set to give an invalid configuration. The UE keeps current configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	See specific message content.
2	→		RADIO BEARER RELEASE FAILURE	The UE shall not change the configuration.
3		←	RADIO BEARER RELEASE	This message includes IE set to give an invalid configuration
4				The UE does not change the configuration
5	→		RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

RADIO BEARER RELEASE (Step1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER RELEASE FAILURE (Step 2)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

RADIO BEARER RELEASE (Step 3) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER RELEASE (Step 3) (TDD)

Information Element	Value/remark
-PRACH TFCS	Present

RADIO BEARER RELEASE FAILURE (Step 5)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.3.6.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, which is set to "protocol error" in IE "failure cause" and is set to "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 4 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

8.2.3.10 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Unsupported configuration)

8.2.3.10.1 Definition

8.2.3.10.2 Conformance requirement

The UE shall keep its old configuration when it receives a RADIO BEARER RELEASE message which specifies unsupported configuration parameters for the UE. Then the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which, setting value "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.10.3 Test purpose

To confirm that the UE keeps its configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if the received RADIO BEARER RELEASE message requests for configuration unspported by the UE.

8.2.3.10.4 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

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message to the UE, referring to a frequency which cannot be supported by the UE. The UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC and set "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	The message contains a configuration not supported by the UE
2	→		RADIO BEARER RELEASE FAILURE	The UE shall not change the radio bearer configuration.

Specific Message Contents

RADIO BEARER RELEASE (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark

Frequency info
  - UARFCN uplink (Nu)
  - UARFCN downlink (Nd)
	
	0
	950

RADIO BEARER RELEASE (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN (Nt)	 0

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.3.10.5   Test requirement

After step 1 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, stating the reason "configuration unsupported" in IE "failure cause".

8.2.3.11 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old configuration)

8.2.3.11.1   Definition

8.2.3.11.2   Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the radio bearers before T312 timer expires and detects the same serving cell only. Then it shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" in IE "failure cause" after it reverts to the old configuration.

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.11.3   Test purpose

To confirm that the UE reverts to the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if the UE fails to release the radio bearers in accordance with the specified settings in RADIO BEARER RELEASE message before T312 timer expires.

8.2.3.11.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message and keeps its current physical channel configuration. The UE is expected to encounter a failure while releasing the radio bearer. After T312 timer expires, the UE shall revert to the old radio bearer configuration, so the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RELEASE	
2				The SS does not configure the specified L1.
3	→		RADIO BEARER RELEASE FAILURE	After T312 expiry the UE fails to release a radio bearer and reverts to the old configuration.

Specific Message Contents

RADIO BEARER RELEASE

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.3.11.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" in IE "failure cause".

8.2.3.12 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and ~~reversion failure~~cell re-selection)

8.2.3.12.1 Definition

8.2.3.12.2 Conformance requirement

The UE shall perform a cell update procedure when the UE selects another cell after the detection of physical channel failure during a radio bearer release procedure. After the UE completes cell update procedure, the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.12.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message after it completes a cell update procedure following a physical channel failure during the radio bearer release procedure.

8.2.3.12.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.3.12

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.3.12 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. The SS transmits a RADIO BEARER RELAESE message to the UE, but it does not configure the specified L1 in accordance with the settings in the message. This is expected to cause the UE to experience a failure to release the radio bearer and it subsequently tries to revert to the old configuration. The SS configures its downlink transmission power settings according to columns "T1" in table 8.2.3.12. The UE shall find cell 2 and transmits 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 FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2				The SS does not configure the specified L1 in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.3.12.
3		←	Void	
4	→		CELL UPDATE	The UE finds a new cell 2 and enter CELL_FACH state. This message includes the value "cell reselection" set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	See message content.
6	→		UTRAN MOBILITY INFORMATION CONFIRM~~Void~~	
7	→		RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

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
U-RNTI	
- SRNC Identity	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

~~CELL UPDATE CONFIRM (Step 5)~~

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

RADIO BEARER RELEASE FAILURE (Step 7)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.3.12.5 Test requirement

After step 3 the UE shall transmit a CELL UPDATE message on the uplink 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 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.3.13 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.3.13.1 Definition

8.2.3.13.2 Conformance requirement

If the UE receives a RADIO BEARER RELEASE message during a reconfiguring procedure due to a radio bearer message other than RADIO BEARER RELEASE message, it shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3, clause 8.6.3.11.

8.2.3.13.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RELEASE message during a reconfiguring procedure due to a radio bearer message other than a RADIO BEARER RELEASE message, it shall keep its configuration as if the RADIO BEARER RELEASE message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.3.13.4 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 RECONFIGURATION message to the UE. The SS transmits a RADIO BEARER RELEASE message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the RADIO BEARER RELEASEmessage, the UE shall keep the configuration as if it had not received the RADIO BEARER RELEASE message and shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the RADIO BEARER RELEASE FAILURE message, the UE reconfigures the new physical channel parameters upon the activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	The UE receives any message other than RADIO BEARER RELEASE. (e.g. RADIO BEARER SETUP)
2	←		RADIO BEARER RELEASE	Sent before the expiry of IE "Activation Time" stated in message in step 1.
3	→		RADIO BEARER RELEASE FAILURE	The UE does not change the configuration due to the reception of RADIO BEARER RECONFIGURATION message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH Info - Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

The contents of RADIO BEARER SETUP message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A. Information element(s) to be changed are listed below:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

RADIO BEARER RELEASE (Step 2) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info Uplink DPCH Info - Scrambling code number	Not Present 2

RADIO BEARER RELEASE (Step 2) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

RADIO BEARER RELEASE FAILURE

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.3.13.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message.

8.2.3.14 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.3.14.1 Definition

8.2.3.14.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid RADIO BEARER RELEASE message which does not include any IEs except IE "Message Type". It shall transmit a RADIO BEARER RELEASE FAILURE message which indicate the value "protocol error" in IE "failure cause" and setting "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon reception of a RADIO BEARER RELEASE message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a RADIO BEARER RELEASE FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.3.

8.2.3.14.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if it receives an invalid RADIO BEARER RELEASE message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER RELEASE message including some IEs set to give an invalid configuration.

8.2.3.14.4 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 an invalid RADIO BEARER RELEASE message, which does not include any IEs except IE "Message Type", to the UE. The UE keeps the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, which shall indicate the value "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits a RADIO BEARER RELEASE message including some IEs set to give an invalid configuration. The UE keeps current configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	RADIO BEARER RELEASE	See specific message content.
2	→		RADIO BEARER RELEASE FAILURE	The UE shall not change its current configuration.
3		←	RADIO BEARER RELEASE	This message includes IE set to give an invalid configuration.
4				The UE does not change its configuration
5	→		RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Information Element	Value/remark
All IEs	Not Present

RADIO BEARER RELEASE FAILURE (Step 2)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

RADIO BEARER RELEASE (Step 3) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

RADIO BEARER RELEASE (Step 3) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

RADIO BEARER RELEASE FAILURE (Step 5)

The contents of RADIO BEARER RELEASE FAILURE message in this test case is the same as the RADIO BEARER RELEASE FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.3.14.5 Test requirement

After step 1 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting "protocol error" in IE "failure cause" and also indicating "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 3 the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.3.16 Radio Bearer Release for transition from CELL_DCH to CELL_DCH: Success (Subsequently received)

8.2.3.16.1 Definition

8.2.3.16.2 Conformance requirement

If the UE receives a RADIO BEARER RELEASE message before the UE releases the radio bearer according to the previous RADIO BEARER RELEASE message, the UE shall ignore the new RADIO BEARER RELEASE message and releases according to the previous RADIO BEARER RELEASE message. Finally, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3, clause 8.6.3.11.

8.2.3.16.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RELEASE message before the UE releases the radio bearer according to a previous RADIO BEARER RELEASE message it ignore the new RADIO BEARER RELEASE message and configures according to the previous RADIO BEARER RELEASE message received.

8.2.3.16.4 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. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE releases the radio access bearer, the UE ignores the second RADIO BEARER RELEASE message and releases the radio bearer according to the previous RADIO BEARER RELEASE message received. Finally, the UE shall transmit RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	For FDD, the SS sets its UL scrambling code to "1".
2	←		RADIO BEARER RELEASE	Message sent before the expiry of "activation time" specified in message in step 1. For FDD, the IE "Secondary scrambling code" is set to "2". For TDD the code combination assigned is different ftrom that assigned in stage 1.
3	→		RADIO BEARER RELEASE COMPLETE	The UE ignores the RADIO BEARER RELEASE message in step 2 and release radio bearer according to the RADIO BEARER RELEASE message in step 1.

Specific Message Contents

RADIO BEARER RELEASE (Step 1) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- Secondary scrambling code	1

RADIO BEARER RELEASE (Step 1) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

RADIO BEARER RELEASE (Step 2) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH Info	
- Secondary scrambling code	2

RADIO BEARER RELEASE (Step 2) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

8.2.3.16.5 Test requirement

After step 2 the UE shall transmit an RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

8.2.3.17 Radio Bearer Release for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.3.17.1 Definition

8.2.3.17.2 Conformance requirement

If the UE receives a RADIO BEARER RELEASE message before the UE releases the radio bearer according to the previous RADIO BEARER RELEASE message, the UE shall ignore the new RADIO BEARER RELEASE message and releases the radio bearers according to the previous RADIO BEARER RELEASE message. Finally, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3, clause 8.6.3.11.

8.2.3.17.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER RELEASE message before the UE releases the radio bearer according to a previous RADIO BEARER RELEASE message, it ignores the new RADIO BEARER RELEASE message and configures according to the previous RADIO BEARER RELEASE message received.

8.2.3.17.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE releases the radio access bearer, the UE ignores the second RADIO BEARER RELEASE message and releases the radio bearers according to the previous RADIO BEARER RELEASE message received. Finally, the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	For FDD, the SS sets its UL scrambling code to "1".
2		←	RADIO BEARER RELEASE	Sent before the expiry stated in IE "Activation Time" of RADIO BEARER RELEASE message in step 1. For TDD the IE "Secondary scrambling code" is set to "2". For TDD, the code combination assigned is different from that assigned in stage 1.
3	→		RADIO BEARER RELEASE COMPLETE	The UE ignores the RADIO BEARER RELEASE message in step 2 and release radio bearers according to the RADIO BEARER RELEASE message in step 1.

Specific Message Contents

RADIO BEARER RELEASE (Step 1) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH Info - Secondary scrambling code	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 1

RADIO BEARER RELEASE (Step 1) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned by SS

RADIO BEARER RELEASE (Step 2) (FDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH Info - Secondary scrambling code	Not Present 2

RADIO BEARER RELEASE (Step 2) (TDD)

The contents of RADIO BEARER RELEASE message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination to that used in step 1.

8.2.3.17.5 Test requirement

After step 2 the UE shall transmit an RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

8.2.4 Transport channel reconfiguration

8.2.4.1 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Success with no transport channel type switching

8.2.4.1.1 Definition

8.2.4.1.2 Conformance requirement

The UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC after it correctly reconfigures the radio bearers according to the TRANSPORT CHANNEL RECONFIGURATION message, which specifies a hard handover by changing the scrambling code for the DPCH.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.1.3 Test purpose

To confirm that the UE reconfigures the channel configuration according to a TRANSPORT CHANNEL RECONFIGURATION message, which also specifies a hard handover by changing the scrambling code for the DPCH.

8.2.4.1.4 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes new configuration parameters. The UE shall reconfigure the new configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1			Void	
2			Void	
3	←		TRANSPORT CHANNEL RECONFIGURATION	UL scrambling code is modified.
4			Void	
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Uplink DPCH info - Scrambling code number Downlink information common for all radio links - Downlink DPCH info common for all RL - Timing Indicator	Different value from previous value Maintain

TRANSPORT CHANNEL RECONFIGURATION (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark
- Uplink DPCH timeslots and codes - First timeslot code list Downlink information common for all radio links - Downlink DPCH info common for all RL - Timing Indicator	A different code combination to that used previously. Maintain

8.2.4.1.5 Test requirement

After step 3 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.1a Transport channel reconfiguration (Transmission Rate Modification with Timing Maintained) from CELL_DCH to CELL_DCH of the same cell: Success

8.2.4.1a.1 Definition

8.2.4.1a.2 Conformance requirement

The UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC after it correctly reconfigures the radio bearers according to the TRANSPORT CHANNEL RECONFIGURATION message, which specifies a hard handover to modify the transmission rate by (1) changing physical channel information and (2) changing either TFCS and TFS or TFCS only.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.1a.3 Test purpose

To confirm that the UE reconfigures the physical channel and transport channel configuration according to a TRANSPORT CHANNEL RECONFIGURATION message, which specifies a hard handover by changing physical channel information and either TFCS and TFS or TFCS only.

8.2.4.1a.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Note : Transmission rate shall be set to the maximum rate for the UE during the radio bearer establishment procedure.

Test Procedure

The UE is in CELL_DCH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to modify the transmission rate which includes a new physical channel information and the TFCS is reconfigured to restrict the use of TFCI. The UE shall reconfigure the new configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC. Next the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to modify the transmission rate which includes new physical channel information and new TFCS and TFS. The UE shall reconfigure the new configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3		←	TRANSPORT CHANNEL RECONFIGURATION	
4	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
UL Transport channel information for all transport channels	Not Present
Added or Reconfigured UL TrCH information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE mode	FDD
- CHOICE DL parameters	Explicit
- DL DCH TFCS	
- CHOICE TFCI Signalling	Normal
- TFCI Field 1 Information	
- CHOICE TFCS representation	Complete reconfiguration
- TFCS complete reconfigure	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10 Parameter Set which is used in RADIO BEARER SETUP message in initial procedure.
- CTFC information	
- CTFC	This CTFC value is set as defined value to be restricted from the TFCS defined in RADIO BEARER SETUP message and repeated for TFC numbers.
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	Not Present

8.2.4.1a.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

After step 3 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.2 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Failure (Unsupported configuration)

8.2.4.2.1 Definition

8.2.4.2.2 Conformance requirement

The UE shall keep its old configuration when the UE receives a TRANSPORT CHANNEL RECONFIGURATION message which includes unsupported configuration parameters and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.2.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received TRANSPORT CHANNEL RECONFIGURATION message specifies unsupported configuration parameters.

8.2.4.2.4 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 TRANSPORT CHANNEL RECONFIGURATION message, which includes configuration parameters unsupported by the UE. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, reporting the event "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONGURATION	Including configuration unsupported by the UE
2	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE shall not change the settings used by the transport channels.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	0.
- UARFCN downlink (Nd)	950

TRANSPORT CHANNEL RECONFIGURATION (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.4.2.5   Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, indicating "configuration unsupported" in IE "failure cause".

8.2.4.3   Transport channel reconfiguration from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion to old configuration)

8.2.4.3.1   Definition

8.2.4.3.2   Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the new physical channel according to the received TRANSPORT CHANNEL RECONFIGURATION message and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.3.3   Test purpose

To confirm that the UE reverts to the old configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the new configuration according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.3.4   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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes new configuration parameters but the SS does not configure the new physical channel specified in this message and keep its old configuration. Therefore, the UE cannot synchronise with the SS on the new physical channel and shall revert to the old configuration after T312 expires. Then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	Specifies a change in the TFS of the dedicated transport channel used.
2				The SS does not reconfigure the new configuration.
3	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE reverts to the old configuration and transmits this message.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A.

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.4.3.5 Test requirement

After step 2 the UE shall revert to the old configuration and transmit a TRANPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, and it shall set the value "physical channel failure" in IE "failure cause".

8.2.4.4 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Failure (Physical channel failure and reversion failure)

8.2.4.4.1 Definition

8.2.4.4.2 Conformance requirement

The UE shall perform a cell update when physical channel failure and reversion failure occur. After the UE completes cell update procedure, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.4.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes a cell update procedure when the UE cannot synchronise with the SS on the new channel before T312 expires and fails to revert to the old configuration.

8.2.4.4.4 Method of test

Initial Condition

System Simulator: 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE. The message specifies a new configuration but the SS does not reconfigure the new channel specified in this message and release the old configuration. The UE cannot synchronise with SS before T312 expires and shall attempt to revert to the old configuration. The UE cannot revert to the old configuration and then transmit a CELL UPDATE

message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2				The SS does not reconfigure L1 in accordance with TRANSPORT CHANNEL RECONFIGURTION message and release the old configuration.
3	→		CELL UPDATE	This message includes the value "radio link failure" set in IE "Cell update cause".
4		←	CELL UPDATE CONFIRM	This message includes IE "Physical channel information elements".
5				The SS changes physical channel configuration according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
7	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A.

CELL UPDATE (Step 3)

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
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001'
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 4) (FDD)

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

Information Element	Value/remark
RRC State indicator	CELL_DCH
UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 4) (TDD)

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

Information Element	Value/remark
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

TRANSPORT CHANNEL RECONGURATION FAILURE (Step 7)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.4.4.5 Test requirement

After step 2 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "radio link failure".

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.4.5 Transport Channel Reconfiguration from CELL_DCH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.4.5.1 Definition

8.2.4.5.2 Conformance requirement

If the UE receives a TRANSPORT CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION message, it shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4, clause 8.6.3.11.

8.2.4.5.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than a TRANSPORT CHANNEL RECONFIGURATION, it shall keep its configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.4.5.4 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 RECONFIGURATION message to the UE. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the TRANSPORT CHANNEL RECONFIGURATION message, the UE shall keep the configuration as if it had not received the TRANSPORT CHANNEL RECONFIGURATION message and shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the TRANSPORT CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical configuration parameters upon the activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info" for FDD mode
2		←	TRANSPORT CHANNEL RECONFIGURATION	Sent before the time specified in IE "Activation Time Info" of message in step 1 has elapsed.
3	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE shall not change the configuration due to the reception of TRANSPORT CHANNEL RECONFIGURATION message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type indicated as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	2

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type indicated as as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination that used previously.

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.4.5.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the new coniguration specified in step 1.

8.2.4.6 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.4.6.1 Definition

8.2.4.6.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid TRANSPORT CHANNEL RECONFIGURATION message which does not include any IEs except IE "Message Type". Then it shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message with the value "protocol error" set in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon reception of a TRANSPORT CHANNEL RECONFIGURATION message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.6.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the received TRANSPORT CHANNEL RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration..

8.2.4.6.4 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 an invalid TRANSPORT CHANNEL RECONFIGURATION message to the UE, which does not include any IEs except IE "Message Type". The UE shall keep the old configuration and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, specifying "protocol error" in IE "failure cause" and also indicating "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits a TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration. The UE keeps current configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	See specific message content.
2	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE does not change its configuration.
3		←	TRANSPORT CHANNEL RECONFIGURATION	This message includes IE set to give an invalid configuration
4				The UE does not change its configuration
5	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Information Element	Value/remark
All IEs	Not Present

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (FDD)

Use the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS"as found in Annex A with the following exceptions.

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (TDD)

Use the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS"as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.4.6.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. The message shall specify "protocol error" in IE "failure cause" and set value "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 4 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.4.7 Transport channel reconfiguration from CELL_DCH to CELL_FACH: Success

8.2.4.7.1 Definition

8.2.4.7.2 Conformance requirement

The UE shall correctly reconfigure the channels according to TRANSPORT CHANNEL RECONFIGURATION message and transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.7.3 Test purpose

To confirm that the UE reconfigures the channel according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.7.4 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE and the UE performs a state transition from CELL_DCH to CELL_FACH in the same cell. The UE then reconfigures the new channels according to this message and system information messages. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction UE	Direction SS	Message	Comment
1		←	TRANSPORT CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exception:

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

8.2.4.7.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the common physical channel.

8.2.4.8 Void

8.2.4.9 Transport channel reconfiguration from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.4.9.1 Definition

8.2.4.9.2 Conformance requirement

The UE shall initiate a cell update procedure when the UE performs cell reselection during a transport channel reconfiguration procedure. After the UE completes a cell update procedure, the UE shall continue to perform the transport channel reconfiguration procedure and correctly reconfigure the channel.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.9.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after it completes a cell update procedure.

8.2.4.9.4 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 TRANSPORT CHANNEL RECONFIGURATION message, which includes IE "Primary CPICH info" and no dedicated physical channel information to transit from CELL_DCH to CELL_FACH, to the UE. As the UE cannot detect the specified cell, the UE shall initiate a cell re-selection procedure and 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 a CELL UPDATE message. The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	TRANSPORT CHANNEL RECONGURATION	This message include IE "Primary CPICH info".
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 CONFIRMVoid	
7	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions.

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

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions.

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	4

CELL UPDATE (Step 4)

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

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

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 5)

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

8.2.4.9.5 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 TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.10 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Success

8.2.4.10.1 Definition

8.2.4.10.2 Conformance requirement

The UE shall correctly reconfigure the channels according to a TRANSPORT CHANNEL RECONFIGURATION message, which trigger a state transition from CELL_FACH to CELL_DCH in the same cell.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.10.3 Test purpose

To confirm that the UE reconfigures a new channel using dedicated physical channel according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.10.4 Method of test

Initial Condition

System Simulator: 1 cell.

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 TRANSPORT CHANNEL RECONFIGURATION message, which includes IE "Uplink DPCH info" and IE "Downlink DPCH info" leading to a state transition from CELL_FACH to CELL_DCH in the same cell, to the UE. The UE shall reconfigure the new channel according to this message. Finally, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	TRANSPORT CHANNEL RECONFIGURATION	Includes both IE "Uplink DPCH Info" and IE "Downlink DPCH Info" in the message.
2				Reconfiguration of transport channel
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

8.2.4.10.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT RECONFIGURATION COMPLETE message on the newly configured DPCH.

8.2.4.11 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Failure (Unsupported configuration)

8.2.4.11.1 Definition

8.2.4.11.2 Conformance requirement

The UE shall keep its old configuration when the UE receives a TRANSPORT CHANNEL RECONFIGURATION message which includes unsupported configuration parameters and transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.11.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC when it receives a TRANSPORT CHANNEL RECONFIGURATION message which includes unsupported configuration parameters.

8.2.4.11.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message, which includes configuration parameters unsupported by the UE, to the UE. The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONGURATION	The message includes configuration unsupported by the UE
2	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE shall not change its configuration.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

TRANSPORT CHANNEL RECONFIGURATION (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.4.11.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. The UE shall set "configuration unsupported" in IE "failure cause" of the message.

8.2.4.12 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old channel)

8.2.4.12.1 Definition

8.2.4.12.2 Conformance requirement

The UE shall revert to the old configuration when the UE has failed to reconfigure the new transport channel requested and detects the same serving cell only. The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message to UTRAN.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.12.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the UE fails to reconfigure the new channel according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.12.4   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 in CELL_DCH state. SS transmits a TRANSPORT CHANNEL RECONFIGURATION message, which includes the new transport channel parameters, to the UE. However, SS keeps its current physical channel configuration.. Hence, the UE shall experience a failure in the reconfiguration process. After T312 expires, the UE shall revert to the old channel configuration. Then the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, stating the reason "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	TRANSPORT CHANNEL RECONGURATION	Message includes IE "Downlink DPCH Info" and IE "Uplink DPCH Info"
2				SS does not reconfigure the channel causing the UE to detect a physical channel failure.
3	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	After T312 expires the UE shall revert to the old configuration and transmit this message.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.4.12.5   Test requirement

After step 2 the UE shall transmit a TRANPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" in IE "failure cause".

8.2.4.13 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Failure (Physical channel failure and ~~reversion failure~~cell re-selection)

8.2.4.13.1 Definition

8.2.4.13.2 Conformance requirement

The UE shall initiate a cell update procedure when it selects another cell, following a physical channel failure in the transport channel reconfiguration procedure. After the UE completes the cell update procedure, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.13.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes a cell update procedure, when the UE cannot reconfigure the new channel before timer T312 expires.

8.2.4.13.4 Method of test

Initial Condition

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

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1.

Test Procedure

Table 8.2.4.13

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.4.13 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE in cell 1. The message includes a new configurationparameters. However, the SS does not reconfigure the specified configuration. At the same time, the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.13. As a result, the UE cannot synchronise with the SS on the new DPCH before T312 expires. The UE initiates the cell re-selection procedure transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2. The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2				The SS does not reconfigure L1 and transport channel in accordance with the settings in the message, and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.4.13.
3			Void	
4				The UE shall find cell 2, camp onto it,
5	→		CELL UPDATE	This message include the value "cell reselection" set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	See message content.
7	→		UTRAN MOBILITY INFORMATION CONFIRM Void	
8	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

CELL UPDATE (Step 5)

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
U-RNTI	
- SRNC Identity	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 6)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 7)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 6)

The contents of CELL UPDATE CONFIRM message are identical as "CELL UPDATE CONFIRM message" as found in Annex A.

TRANSPORT CHANNELRECONGURATION FAILURE (Step 8)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.4.13.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2.

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

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

8.2.4.14 Transport Channel Reconfiguration from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.4.14.1 Definition

8.2.4.14.2 Conformance requirement

If the UE receives a TRANSPORT CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION message, it shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4, clause 8.6.3.11.

8.2.4.14.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than a TRANSPORT CHANNEL RECONFIGURATION, it shall keep its configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.4.14.4 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 RECONFIGURATION message to the UE. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the TRANSPORT CHANNEL RECONFIGURATION message, the UE shall keep its current configuration as if it had not received the TRANSPORT CHANNEL RECONFIGURATION message and shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the TRANSPORT CHANNEL RECONFIGURATION

FAILURE message, the UE reconfigures the new physical channel parameters upon the activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		←	TRANSPORT CHANNEL RECONFIGURATION	Sent before the elapse of the Activation time specified in step 1.
3	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE does not reconfigure according to the TRANSPORT CHANNEL RECONFIGURATION message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions

Information Element	Value/remark
Activation Time Info Uplink DPCH info	Current CFN-[current CFN mod 8 + 8]
- Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions

Information Element	Value/remark
Activation Time Uplink DPCH timeslots and codes	Current CFN-[current CFN mod 8 + 8]
- First timeslot code list	Assigned by SS

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (FDD)

For TRANSPORT CHANNEL RECONFIGURATION in step 2, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info Uplink DPCH info	Not Present
- Scrambling code number	2

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (TDD)

For TRANSPORT CHANNEL RECONFIGURATION in step 2, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Not Present
- Uplink DPCH timeslots and codes	
- First timeslot code list	A different code combination that used previously .

TRANSPORT CHANNEL RECONFIGURATION FAILURE

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.4.14.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message.

8.2.4.15 Transport channel reconfiguration from CELL_FACH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.4.15.1 Definition

8.2.4.15.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid TRANSPORT CHANNEL RECONFIGURATION message which does not includes any IEs except IE "Message Type". The UE shall then transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message, specifying "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon the reception of a TRANSPORT CHANNEL RECONFIGURATION message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.15.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGRATION FAILURE message on the DCCH using AM RLC, if it receives an invalid TRANSPORT CHANNEL RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration.

8.2.4.15.4 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 an invalid TRANSPORT CHANNEL RECONFIGURATION message, which does not include any IEs except IE "Message Type", to the UE. The UE shall keep the old configuration and then transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. This message shall contain the value "protocol error" in IE "failure cause" and also "ASN.1 violation or

encoding error" in IE "Protocol error cause". SS transmits TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration. The UE keeps its current configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	See specific message content.
2	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The UE does not change its configuration.
3		←	TRANSPORT CHANNEL RECONFIGURATION	This message includes IEs which is set to give an invalid configuration
4				The UE does not change its configuration.
5	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Information Element	Value/remark
All IEs	Not Present

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

TRANSPORT CHANNEL RECONFIGURATION (Step 3) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the TRANSPORT CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.4.15.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. The content of the message shall specify "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 4 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.4.16 Transport channel reconfiguration from CELL_FACH to CELL_FACH: Success with no transport channel type switching

8.2.4.16.1 Definition

8.2.4.16.2 Conformance requirement

The UE shall remain in CELL_FACH state in another cell and transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC after transition from CELL_FACH in the current cell to CELL_FACH in another cell as requested in the received TRANSPORT CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.16.3 Test purpose

To confirm that the UE transits from CELL_FACH in the current cell to CELL_FACH in another cell according to a TRANSPORT CHANNEL RECONFIGURATION message received from the SS.

8.2.4.16.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.4.16

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.4.16 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message, which includes the parameters that invoke the UE to transit from CELL_FACH in the current cell to CELL_FACH in cell 2, to the UE. Then the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.16. The UE moves to cell 2 and configures the new transport channels and the common physical channel according to the system information messages and transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.4.16.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions.

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

TRANSPORT CHANNEL RECONFIGURATION (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions.

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	4

8.2.4.16.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on DCCH using AM RLC in cell 2.

8.2.4.17 Transport channel reconfiguration from CELL_FACH to CELL_FACH: Success (Cell re-selection)

8.2.4.17.1 Definition

8.2.4.17.2 Conformance requirement

The UE shall initiate the cell update procedure when the UE performs cell reselection during a transport channel reconfiguration procedure. After the UE complete cell update procedure, the UE shall continue to perform the transport channel reconfiguration procedure and correctly reconfigure the channel.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.17.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after UE completes a cell update procedure indicated by a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.17.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.4.17

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.4.17 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. On transmitting a TRANSPORT CHANNEL RECONFIGURATION message, which does not include the IE "Primary CPICH info", the SS configures its downlink transmission power settings according to columns "T1" in table 8.2.4.17. The UE shall initiate the cell reselection procedure. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2. The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	This message does not include IE "Primary CPICH info"
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.4.17.
3			Void	
4	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	See message content.
6	→		UTRAN MOBILITY INFORMATION CONFIRM~~Void~~	
7	→		TRANSPORT CHANNELRECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CPICH info - Primary scrambling code	Not Present

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	Not present

CELL UPDATE (Step 4)

The contents of CELL UPDATE message is identical as "Contents of CELL UPDATE message" as found in Annex A for FDD and Annex A for TDD.

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

~~CELL UPDATE CONFIRM (Step 5)~~

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

8.2.4.17.5 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 TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.18 Transport Channel Reconfiguration from CELL_DCH to CELL_DCH: Success (Subsequently received)

8.2.4.18.1 Definition

8.2.4.18.2 Conformance requirement

If the UE receives a TRANSPORT CHANNEL RECONFIGURATION message before the UE configures the radio bearer according to the previous TRANSPORT CHANNEL RECONFIGURATION message, the UE shall ignore the new TRANSPORT CHANNEL RECONFIGURATION message and configure according to the first TRANSPORT CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4, clause 8.6.3.11.

8.2.4.18.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message before the UE configures the radio bearer according to the previous TRANSPORT CHANNEL RECONFIGURATION message it ignores the second TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.18.4 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. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous TRANSPORT CHANNEL RECONFIGURATION message elapses, the UE ignores the new TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	For FDD, the "Secondary scrambling code is set to "1" and for TDD , the code combination is assigned by SS.
2	←		TRANSPORT CHANNEL RECONFIGURATION	SS send this message before the expiry of "activation time" specified in TRANSPORT CHANNEL SETUP message of step 1. For FDD the IE "Secondary scrambling code" is set to "2". For TDD the code combination assigned is different from that assigned in stage 1.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE ignores the TRANSPORT CHANNEL RECONFIGURATION message in step 2 and configures according to the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION messages in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH Info	
- ~~Secondary scrambling code~~Scrambling code number	1

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION messages in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned in step 1

TRANSPORT CHANNEL RECONFIGURATION (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION messages in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH Info	Not Present
- Scrambling code number~~Secondary scrambling code~~	2

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION messages in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes	Not Present
- First timeslot code list	A different code combination to that used in step 1.

8.2.4.18.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.19 Transport Channel Reconfiguration from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.4.19.1 Definition

8.2.4.19.2 Conformance requirement

If the UE receives a TRANSPORT CHANNEL RECONFIGURATION message before the UE configures the radio bearer according to the previous TRANSPORT CHANNEL RECONFIGURATION message, the UE shall ignore the new TRANSPORT CHANNEL RECONFIGURATION message and configure according to the first TRANSPORT CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4, clause 8.6.3.11.

8.2.4.19.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message before the UE configures the radio bearer according to the previous TRANSPORT CHANNEL RECONFIGURATION message it ignores the second TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.19.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_FACH state. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous TRANSPORT CHANNEL RECONFIGURATION message elapses, the UE ignores the new TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	For FDD, the "Secondary scrambling code is set to "1" and for TDD, the code combination is assigned by SS.
2		←	TRANSPORT CHANNEL RECONFIGURATION	Sent before the elapse of the activation time specified in step 1. For FDD the IE "Secondary scrambling code" is set to "2". For TDD the code combination assigned is different that assigned in stage 1.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE ignores the TRANSPORT CHANNEL RECONFIGURATION message in step 2 and configures according to the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH Info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Scrambling code number~~Secondary scrambling code~~	1

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned in step 1

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (FDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH Info	Not Present
- Scrambling code number~~Secondary scrambling code~~	2

TRANSPORT CHANNEL RECONFIGURATION (Step 2) (TDD)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes	Not Present
- First timeslot code list	A different code combination to that used in step 1.

8.2.4.19.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.4.20 Transport Channel Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.4.20.1 Definition

8.2.4.20.2 Conformance requirement

The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after it receives a TRANSPORT CHANNEL RECONFIGURATION message which invoke the UE to transits from CELL_DCH to CELL_PCH. And then, the UE shall enter CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.20.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and enters CELL_PCH state after it receives a TRANSPORT CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to CELL_PCH.

8.2.4.20.4 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 TRANSPORT CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to CELL_PCH. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters 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		←	TRANSPORT CHANNEL RECONFIGURATION	
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in CELL_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
- Primary CCPCH info	
- Cell parameters ID	4

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.4.20.5 Test requirement

After step 1 the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on uplink DCCH using AM RLC.

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

8.2.4.21 Transport Channel Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.4.21.1 Definition

8.2.4.21.2 Conformance requirement

The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after it receives a TRANSPORT CHANNEL RECONFIGURATION message which invoke the UE to transits from CELL_DCH to URA_PCH. And then, the UE shall enter URA_PCH state.

Reference

3GPP TS 25.331 clause 8.2.4.

8.2.4.21.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and enters URA_PCH stateafter it received a TRANSPORT CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH.

8.2.4.21.4 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 TRANSPORT CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters 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	←		TRANSPORT CHANNEL RECONFIGURATION	
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in URA_PCH state.
4	←		PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		Cell UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

TRANSPORT CHANNEL RECONFIGURATION (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex with following exceptions:

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
- Primary CCPCH info	
- Cell parameters ID	4

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

CELL UPDATE (Step 5)

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"

8.2.4.21.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on uplink DCCH using AM RLC.

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

8.2.4.22 Transport Channel Reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.4.22.1 Definition

8.2.4.22.2 Conformance requirement

The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after it receives a TRANSPORT CHANNEL RECONFIGURATION message which invokes the UE to transit from CELL_FACH to CELL_PCH. And then, the UE shall enter CELL_PCH state

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.22.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and enters CELL_PCH state after it receives a TRANSPORT CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_FACH to CELL_PCH state.

8.2.4.22.4 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 TRANSPORT CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_FACH to CELL_PCH. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters 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	←		TRANSPORT CHANNEL RECONFIGURATION	
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in CELL_PCH state.
4	←		PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Physical channel information	Not Present

PAGING TYPE 1 (Step 4)

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

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

CELL UPDATE (step 5)

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

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

8.2.4.22.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on uplink DCCH using AM RLC.

After step 4 the UE shall transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "paging response".

8.2.4.23 Transport Channel Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.4.23.1 Definition

8.2.4.23.2 Conformance requirement

The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message after it receives a TRANSPORT CHANNEL RECONFIGURATION message which invokes the UE to and transits from CELL_FACH to URA_PCH. And then, the UE shall enter URA_PCH state.

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.23.3 Test purpose

To confirm that the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and enters URA_PCH state after it receives a TRANSPORT CHANNEL RECONFIGURATION message which invokes the UE to transit from CELL_FACH to CELL_PCH.

8.2.4.23.4 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 TRANSPORT CHANNEL RECONFIGURATION message which invokes the UE to transit from CELL_FACH to CELL_PCH. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters 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		←	TRANSPORT CHANNEL RECONFIGURATION	
2	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in URA_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3
Physical channel information	Not Present

PAGING TYPE 1 (Step 4)

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

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

CELL UPDATE (step 5)

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

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

8.2.4.23.5 Test requirement

After step 1 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on uplink DCCH using AM RLC.

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

8.2.5 Transport format combination control

8.2.5.3 Void

8.2.5.4 Transport format combination control in CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.5.4.1 Definition

8.2.5.4.2 Conformance requirement

The UE shall keep its current configuration when it receives an invalid TRANSPORT FORMAT COMBINATION CONTROL message. It shall then transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message, indicating "protocol error" in IE "failure cause" and "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon the reception of a TRANSPORT FORMAT COMBINATION CONTROL message, which includes some IEs set to give an invalid configuration, and then the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.5.

8.2.5.4.3 Test purpose

To confirm after the UE receives an invalid TRANSPORT FORMAT COMBINATION CONTROL message, it transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message and keeps the TFC subset as if no TRANSPORT FORMAT COMBINATION CONTROL message has been received.

To confirm that the UE transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC if it receives a TRANSPORT FORMAT COMBINATION CONTROL message including some IEs set to give an invalid configuration.

8.2.5.4.4 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 an invalid TRANSPORT FORMAT COMBINATION CONTROL message which does not include any IEs except IE "Message Type". The UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message which is set to "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message including some IEs set to get an invalid configuration. The UE keeps its current configuration and transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

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	See specific message content.
3	→		TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The UE shall not change its configuration
4	←		TRANSPORT FORMAT COMBINATION CONTROL	This message includes IEs set to give an invalid configuration.
5	→		TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The UE shall not change its configuration

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL (Step 2)

Information Element	Value/remark
All IEs	Not Present

TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 3)

Information Element	Value/remark
Message Type	"TRANSPORT FORMAT COMBINATION CONTROL FAILURE"
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink TRANSPORT FORMAT COMBINATION CONTROL message.
Integrity check info	The presence if 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.
Failure cause	"protocol error"
Protocol error information	
-Protocol error cause	ASN.1 violation or encoding error

TRANSPORT FORMAT COMBINATION CONTROL (Step 5)

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	DCH
- Restricted UL TrCH identity	15 (for RACH transport channel identity)
- Allowed TFI	0

TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 6)

Information Element	Value/remark
Message Type	"TRANSPORT FORMAT COMBINATION CONTROL FAILURE"
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink TRANSPORT FORMAT COMBINATION CONTROL message.
Integrity check info	The presence if 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.
Failure cause	Invalid configuration

8.2.5.4.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC. The UE shall set the value "protocol error" in IE "Failure cause" and the value "ASN.1 violation or encoding error" in IE "protocol error information".

After step 4 the UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.6 Physical channel reconfiguration

8.2.6.1 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Success

8.2.6.1.1 Definition

8.2.6.1.2 Conformance requirement

The UE shall correctly reconfigure a physical channel according to the PHYSICAL CHANNEL RECONFIGURATION message, which indicates a hard handover procedure and transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.1.3 Test purpose

To confirm that the UE reconfigures the physical channel parameters according to a PHYSICAL CHANNEL RECONFIGURATION message received from the SS. After the reconfiguration, the UE shall be able to communicate with the SS on the new physical channel.

8.2.6.1.4 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 to the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes a new UL scrambling code. The UE shall reconfigure the physical channel at the activation time specified in this message and transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH AM RLC after its transition.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	Including new UL scrambling code .
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

8.2.6.1.5 Test requirement

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

8.2.6.2 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Failure (Unsupported configuration)

8.2.6.2.1 Definition

8.2.6.2.2 Conformance requirement

The UE shall keep its configuration when the UE receives a PHYSICAL CHANNEL RECONFIGURATION message which includes an unsupported configuration and transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, with the reason "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.2.3 Test purpose

To confirm that the UE keeps its configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received PHYSICAL CHANNEL RECONFIGURATION message includes unsupported configuration parameters for the UE.

8.2.6.2.4 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 PHYSICAL CHANNEL RECONFIGURATION message to the UE which includes configuration parameters unsupported by the UE. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	Includes configuration unsupported by the UE
2	→		PHYISICAL CHANNEL RECONFIGURATION FAILURE	The UE shall not reconfigure and continue to communicate using the old configuration.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN uplink (Nu) - UARFCN downlink (Nd)	 0 950

PHYSICAL CHANNEL RECONFIGURATION (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN (Nt)	 0

PHYSICAL CHANNEL RECONFIGURATION FAILURE

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.6.2.5 Test requirement

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and set "configuration unsupported" in IE "failure cause".

8.2.6.3 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Failure (Physical channel failure and reversion to old channel)

8.2.6.3.1 Definition

8.2.6.3.2 Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the new physical channel before the expiry of timer T312, and then transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC indicating "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.3.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new physical channel according to the received PHYSICAL CHANNEL RECONFIGURATION message before timer T312 expiry.

8.2.6.3.4 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 PHYSICAL CHANNEL RECONFIGURATION message to the UE which includes new UL scrambling code . However, the SS keeps its current dedicated physical channel configuration. The UE fails to synchronise with the SS on the new physical channel and after T312 timer expires the UE shall revert to the old configuration. Finally, the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC specifies "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	Including a new UL scrambling code for FDD and First timeslot code list for TDD.
2				The SS does not reconfigure the physical channel so that the UE fails to synchronise on the new physical channel.
3	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expires, the UE shall revert to the old configuration and transmits this message.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION FAILURE

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.6.3.5 Test requirement

After step 2 the UE shall revert to the old configuration and transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, with the value "physical channel failure" in IE "failure cause".

8.2.6.4 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Failure (Physical channel failure and reversion failure)

8.2.6.4.1 Definition

8.2.6.4.2 Conformance requirement

The UE shall perform a cell update procedure when the UE fails to revert to the old configuration, after the detection of physical channel failure during the course of executing a physical channel reconfiguration procedure. After the UE completes the cell update procedure, the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.4.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message after UE completes a cell update procedure when the UE fails synchronise on the old physical channel after the UE cannot synchronise on the new physical channel according to the received PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.4.4 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 PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes new UL scrambling code, but the SS does not configure the new physical channel and release the old configuration. The UE fails to synchronise on the new dedicated physical channel and tries to revert to the old configuration. But the SS already deleted the old physical channel configuration and the UE cannot revert to the old configuration. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC and subsequently transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "physical channel failure" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2			Void	
3		←	PHYSICAL CHANNEL RECONFIGURATION	The message includes new UL scrambling code for FDD and First timeslot code list for TDD .
4				SS does not configure any dedicated physical channel and at the same time, it deletes the old configuration so the UE cannot reconfigure the new physical channel and cannot revert to the old configuration.
5	→		CELL UPDATE	This message includes the value "radio link failure" set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM	This message includes IE "Physical channel information elements".
7				The SS configures the dedicated physical channel according to the IE "Physical channel information elements" included in the CELL UPDATE CONFIRM message.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
9	→		PHYSICAL CHANNELRECONGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

CELL UPDATE (Step 5)

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

Information Element	Value/remark
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	"radio link failure"

CELL UPDATE CONFIRM (Step 6) (FDD)

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

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 4
RRC State indicator	CELL_DCH
UplinkDPCH Info	Same as RADIO BEARER SETUP message used to move to intial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to intial condition

CELL UPDATE CONFIRM (Step 6) (TDD)

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

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 4
RRC State Indicator	CELL_DCH
Uplink DPCH timeslots and codes	Same as RADIO BEARER SETUP message used to move to initial condition
Downlink information for each radio links	Same as RADIO BEARER SETUP message used to move to initial condition

PHYSICAL CHANNEL RECONGURATION FAILURE (Step 9)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.6.4.5   Test requirement

After step 4 the UE shall transmits a CELL UPDATE message using RLC-TM mode on the uplink CCCH with IE "Cell update cause" set to "radio link failure".

After step 7 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

After step 8 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.6.5   Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Failure (Incompatible simultaneous reconfiguration)

8.2.6.5.1   Definition

8.2.6.5.2   Conformance requirement

If the UE receives a PHYSICAL CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than PHYSICAL CHANNEL RECONFIGURATION message, it shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6, clause 8.6.3.11.

8.2.6.5.3   Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than PHYSICAL CHANNEL RECONFIGURATION, it shall keep its configuration as if the PHYSICAL CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.6.5.4   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 RECONFIGURATION message to the UE. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the PHYSICAL CHANNEL RECONFIGURATION message, the UE shall keep the configuration as if it had not received the PHYSICAL CHANNEL RECONFIGURATION message and shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS acknowledges the PHYSICAL CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters upon the activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2	←		PHYSICAL CHANNEL RECONFIGURATION	Sent before the "activation time" specified in the message in step 1 has elapsed.
3	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration due to the reception of a PHYSICAL CHANNEL RECONFIGURATION message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1) (FDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

RADIO BEARER RECONFIGURATION (Step 1) (TDD)

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A, with the following exceptions:

Information Element	Value/remark
Activation Time	Not Present
Uplink DPCH info	
- Scrambling code number	2
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (TDD)

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Different as assigned in Step 1
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain

PHYSICAL CHANNEL RECONFIGURATION FAILURE (step 3)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.6.5.5 Test requirement

After step 2 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC on the DCCH.

8.2.6.6 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Failure (Invalid message reception and Invalid configuration)

8.2.6.6.1 Definition

8.2.6.6.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid PHYSICAL CHANNEL RECONFIGURATION message, which does not include any IEs except IE "Message Type". It shall then transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message which contains the value "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon reception of a PHYSICAL CHANNEL RECONFIGURATION message when the PHYSICAL CHANNEL RECONFIGURATION message that includes some IEs set to give an invalid configuration, and then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE including IE "failure cause" set to "invalid configuration".

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.6.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives an invalid PHYSICAL CHANNEL RECONFIGURATION message which does not include any IEs except IE "Message Type".

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a PHYSICAL CHANNEL RECONFIGURATION message including some IEs set to give an invalid configuration.

8.2.6.6.4 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 an invalid PHYSICAL CHANNEL RECONFIGURATION message to the UE, which does not include any IEs except IE "Message Type". The UE keeps the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, with a value "protocol error" in IE "failure cause" and also a value "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits a PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration. The UE keeps its initial configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "invalid configuration" to IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	See specific message content.
2	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change its configuration.
3		←	PHYSICAL CHANNEL RECONFIGURATION	This message includes IEs which is set to give an invalid configuration
4				The UE does not change its configuration
5	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Information Element	Value/remark
All Es	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 2)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_ ~~FACH~~ DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_FACH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.6.6.5 Test requirement

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting value "protocol error" in IE "failure cause" and also setting value "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.6.7 Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH: Success

8.2.6.7.1 Definition

8.2.6.7.2 Conformance requirement

The UE shall correctly reconfigure a physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to CELL_FACH and transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.7.3 Test purpose

To confirm that the UE reconfigures a common physical channel according to the PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to CELL_FACH.

8.2.6.7.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The UE shall then reconfigure the specified common physical channel according to this message and the system information messages. Following this, it shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exception:

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

8.2.6.7.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE messageon the common physical channel.

8.2.6.8 Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH: Success (Cell re-selection)

8.2.6.8.1 Definition

8.2.6.8.2 Conformance requirement

The UE shall initiate the cell update procedure when the UE performs cell reselection during a physical channel reconfiguration procedure. After the UE completes cell update procedure, the UE shall continue to perform the physical channel reconfiguration procedure and correctly reconfigure the physical channel.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.8.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message after the UE completes a cell update procedure.

8.2.6.8.4 Method of test

Initial Condition

System Simulator: 1 cell.

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which includes IE "Primary CPICH info" and no dedicated physical channel information to invoke the UE to transit from CELL_DCH to CELL_FACH. As the UE cannot detect the specified cell, the UE shall initiate the cell update procedure. The UE transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE then transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1			Void	
2	←		PHYSICAL CHANNEL RECONFIGURATION	This message include IE "Primary CPICH info" for FDD and Primary CCPCH info for TDD.
3			Void	
4	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
5	←		CELL UPDATE CONFIRM	See message content.
6	→		UTRAN MOBILITY INFORMATION CONFIRM~~Void~~	
7	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions:

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

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links	
- Primary CCPCH info	
- Cell parameters ID	4

CELL UPDATE (Step 4)

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

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

CELL UPDATE CONFIRM (Step 5)

Use the same message type found in clause Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type is checked.

CELL UPDATE CONFIRM (Step 5)

The contents of CELL UPDATE CONFIRM message is same as "CELL UPDATE CONFIRM message" as found in Annex A for FDD and Annex A for TDD.

8.2.6.8.5 Test requirement

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

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

After step 6 UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.6.9 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Success

8.2.6.9.1 Definition

8.2.6.9.2 Conformance requirement

The UE shall correctly reconfigure a physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, which invoke UE to transit from CELL_FACH to CELL_DCH and shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.9.3 Test purpose

To confirm that the UE reconfigures a new physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, which invoke UE to transit from CELL_FACH to CELL_DCH.

8.2.6.9.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_FACH to CELL_DCH. The UE shall reconfigure the new dedicated physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	PHYSICAL CHANNEL RECONFIGURATION	
5				The UE shall configure the allocated dedicated physical channels.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A for FDD and Annex A for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A.

8.2.6.9.5 Test requirement

After step 2 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION message on the new dedicated physical channel.

8.2.6.10 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Unsupported configuration)

8.2.6.10.1 Definition

8.2.6.10.2 Conformance requirement

The UE shall keep its old configuration when it receives a PHYSICAL CHANNEL RECONFIGURATION message, which specifies configuration parameters unsupported by the UE. It shall then transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, reporting the cause "configuration unsupported" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.10.3 Test purpose

To confirm that the UE keeps its configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, if the received PHYSICAL CHANNEL RECONFIGURATION message includes unsupported configuration parameters.

8.2.6.10.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes unsupported frequency for the UE. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "configuration unsupported" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	PHYSICAL CHANNEL RECONFIGURATION	Includes unsupported frequencies for the UE
5	→		PHIYISICAL CHANNEL RECONFIGURATION FAILURE	The UE shall not change the physical channel configuration, this message shall be sent using the old configuration.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A.

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN uplink (Nu)	0
- UARFCN downlink (Nd)	950

PHYSICAL CHANNEL RECONFIGURATION (Step 3) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Frequency info	
- UARFCN (Nt)	0

PHYSICAL CHANNEL RECONFIGURATION FAILURE

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Configuration unsupported

8.2.6.10.5   Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, the IE "failure cause" shall be set to "configuration unsupported".

8.2.6.11   Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and successful reversion to old configuration)

8.2.6.11.1   Definition

8.2.6.11.2   Conformance requirement

The UE shall revert to the old configuration when the UE fails to reconfigure the new physical channel before timer T312 expires and detects the same serving cell only. It shall report the failure by transmitting a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, indicating "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.11.3 Test purpose

To confirm that the UE reverts to the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the UE fails to reconfigure the new physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message before the T312 expiry.

8.2.6.11.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_FACH to CELL_DCH. However, the SS keeps its current physical channel configuration and then the UE cannot synchronise with the SS. After T312 expires, the UE attempt to revert to the old configuration. Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		PHYSICAL CHANNEL RECONFIGURATION	
5				The SS does not reconfigure the physical channel, hence the UE shall detect a failure to reconfigure to the new physical channel.
6	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expires the UE reverts to the old configuration and transmits this message.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A for FDD and Annex A for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A for FDD and Annex A for TDD..

PHYSICAL CHANNEL RECONFIGURATION FAILURE

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Physical channel failure

8.2.6.11.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, specifying "physical channel failure" in IE "failure cause".

8.2.6.12 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Physical channel failure and ~~reversion failure~~cell re-selection)

8.2.6.12.1 Definition

8.2.6.12.2 Conformance requirement

The UE shall perform a cell update procedure when the UE selects another cell after the detection of physical channel failure in the physical channel reconfiguration procedure. After the UE completes cell update procedure, the UE transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "physical channel failure" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.12.3 Test purpose

To confirm that the UE initiates a cell update procedure after it fails to reconfigure the new physical channel and selects another cell.

To confirm that UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message after UE completes cell update procedure.

8.2.6.12.4 Method of test

Initial Condition

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

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

Table 8.2.6.12

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.6.12 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_DCH state in cell 1. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, but the SS does not reconfigure L1 accordingly. The SS configures its downlink transmission power settings according to columns "T1"in table 8.2.6.12. As a result, the UE fails to synchronise on the new physical channel before timer T312 expires and reselect cell 2 and then the UE shall transmit a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "Cell reselection". The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving a CELL UPDATE message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "physical channel failure".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	PHYSICAL CHANNEL RECONFIGURATION	
5				The SS does not configure the new dedicated physical channel in accordance with the settings in the message and applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.6.12.
6			Void	
7	→		CELL UPDATE	This message includes the value "cell reselection" set in IE "Cell update cause".
8		←	CELL UPDATE CONFIRM	
9			Void	
10	→		PHYSICAL CHANNEL RECONGURATION FAILURE	UE shall transmit this message in the cell 2.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A for FDD and Annex A for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A for FDD and Annex A for TDD.

CELL UPDATE (Step 7)

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

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"cell reselection"

CELL UPDATE CONFIRM (Step 8)

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

PHYSICAL CHANNEL RECONGURATION FAILURE (Step 10)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	"physical channel failure"

8.2.6.12.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 6 the UE shall transmit a CELL UPDATE message using RLC-TM mode on the uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2.

After step 9 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".

8.2.6.13 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.6.13.1 Definition

8.2.6.13.2 Conformance requirement

If the UE receives a PHYSICAL CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than a PHYSICAL CHANNEL RECONFIGURATION message, it shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6, clause 8.6.3.11.

8.2.6.13.3   Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message during a reconfiguring procedure due to a radio bearer message other than a PHYSICAL CHANNEL RECONFIGURATION, it shall keep its configuration as if the PHYSICAL CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration procedure according to the previously received message.

8.2.6.13.4   Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message before the "activation time" indicated in the RADIO BEARER RECONFIGURATION message expires. When the UE receives the PHYSICAL CHANNEL RECONFIGURATION message, the UE shall keep its configuration as if it had not received the PHYSICAL CHANNEL RECONFIGURATION message and shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the UE transmits the PHYSICAL CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters upon the activation time and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters CELL_FACH state.
4		←	RADIO BEARER RECONFIGURATION	
5		←	PHYSICAL CHANNEL RECONFIGURATION	Sent before the elapse of the frame number specified in IE "Activation time" of the message dispatched in step 4.
6	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration due to the reception of PHYSICAL CHANNEL RECONFIGURATION message.
7	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A.

RADIO BEARER RECONFIGURATION (Step 4) (FDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1

RADIO BEARER RECONFIGURATION (Step 4) (TDD)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
- Uplink DPCH timeslots and codes	
- First timeslot code list	Assigned by SS

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (FDD)

For PHYSICAL CHANNEL RECONFIGURATION in step 5, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time Info	Not Present
Uplink DPCH info	
- Scrambling code number	2

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (TDD)

For PHYSICAL CHANNEL RECONFIGURATION in step 5, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Not present
- Uplink DPCH timeslots and codes	
- First timeslot code list	Different as assigned previously

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 6)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Incompatible simultaneous reconfiguration

8.2.6.13.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 6 the UE shall transmit a RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.6.14 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Failure (Invalid message reception and Invalid configuration)

8.2.6.14.1 Definition

8.2.6.14.2 Conformance requirement

The UE shall keep its old configuration when the UE receives an invalid PHYSICAL CHANNEL RECONFIGURATION message which does not includes any IEs except IE "Message Type". It shall then transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message, set "protocol error" in IE "failure cause" and also set "ASN.1 violation or encoding error" in IE "Protocol error cause". The UE shall keep existing configuration upon reception of a PHYSICAL CHANNEL RECONFIGURATION message, which includes some IEs which are set to give an invalid configuration, and then the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE including IE "failure cause" set to "invalid configuration"

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.14.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if the received message does not include any IEs except IE "Message Type".

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC if it receives a PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration.

8.2.6.14.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. The SS transmits an invalid PHYSICAL CHANNEL RECONFIGURATION message to the UE which does not include any IEs except IE "Message Type". The UE keeps the old configuration and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting "protocol error" in IE "failure cause" and also setting "ASN.1 violation or encoding error" in IE "Protocol error cause". SS transmits PHYSICAL CHANNEL RECONFIGURATION message including some IEs which are set to give an invalid configuration. The UE keeps current configuration and transmits a

PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters CELL_FACH state.
4	←		PHYSICAL CHANNEL RECONFIGURATION	See specific message content.
5	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration.
6	←		PHYSICAL CHANNEL RECONFIGURATION	This message includes IEs which are set to give an invalid configuration.
7				The UE does not change the configuration
8	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A for FDD and Annex A for TDD.

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Information Element	Value/remark
All IEs	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

PHYSICAL CHANNEL RECONFIGURATION (Step 6) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
- Default DPCH Offset Value	512
- DPCH frame offset	1024

PHYSICAL CHANNEL RECONFIGURATION (Step 6) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
-PRACH TFCS	Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

The contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message in this test case is the same as the PHYSICAL CHANNEL RECONFIGURATION FAILURE message as found in Annex A, with the following exceptions:

Information Element	Value/remark
Failure cause	Invalid configuration

8.2.6.14.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 4 the UE shall keep its old configuration, transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with "protocol error" in IE "failure cause" and also "ASN.1 violation or encoding error" in IE "Protocol error cause".

After step 7 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "invalid configuration".

8.2.6.15 Physical channel reconfiguration for transition from CELL_FACH to CELL_FACH: Success

8.2.6.15.1 Definition

8.2.6.15.2 Conformance requirement

The UE shall correctly reconfigure a common physical channel in another cell according to a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_FACH in a current cell to CELL_FACH in the specified another cell.

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.15.3 Test purpose

To confirm that the UE reconfigures a new common physical channel in another cell according to the PHYSICAL CHANNEL RECONFIGURATION message received from the SS.

8.2.6.15.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.6.15

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

Table 8.2.6.15 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 2.

The UE is in the CELL_FACH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_FACH in the current cell to CELL_FACH in cell 2, to the UE. The SS configures its downlink transmission power settings according to columns "T1" in table 8.2.6.15. The UE shall move to cell 2 and configure the common physical channel and transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	
2				The SS applies the downlink transmission power settings, according to the values in columns "T1" of table 8.2.6.15.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions.

Information Element	Value/remark
~~New C-RNTI~~	~~0000 0000 0000 0001B~~
Downlink information for each radio links	
- Primary CPICH info	
- Primary scrambling code	150

PHYSICAL CHANNEL RECONFIGURATION (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark

Downlink information for each radio links
   - Primary CCPCH info
     -Cell parameters ID
	
	4

8.2.6.15.5 Test requirement

After step 2 the UE shall tranmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message in cell 2.

8.2.6.16 Physical channel reconfiguration for transition from CELL_FACH to CELL_FACH: (Cell re-selection)

8.2.6.16.1 Definition

8.2.6.16.2 Conformance requirement

The UE shall initiate the cell reselection procedure when the UE performs cell reselection during a physical channel reconfiguration procedure. After the UE completes cell update procedure, the UE shall continue to perform the physical channel reconfiguration procedure and correctly reconfigure the physical channel.

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.16.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after the UE completes a cell update procedure indicated by a PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.16.4 Method of test

Initial Condition

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

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

Test Procedure

Table 8.2.6.16

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
CPICH Ec (FDD)	dBm/ 3.84 MHz	-60	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-60

Table 8.2.6.16 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings between columns "T0" and "T1", whenever the description in multi-cell condition specifies a reverse in the transmission power settings for cell 1 and cell 2.

The UE is in CELL_FACH state in cell 1. On transmitting a PHYSICAL CHANNEL RECONFIGURATION message, which does not include the IE "Primary CPICH info", the SS configures its downlink transmission power settings

according to columns "T1" in table 8.2.6.16. The UE shall initiate the cell update procedure and transmits a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection" in cell 2. The SS shall transmit a CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	This message does not include IE "Primary CPICH info" (FDD).
2				The UE shall detect a failure to transmission power settings, according to the values in columns "T1" of table 8.2.6.16.
3			Void	
4	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CPICH info - Primary scrambling code	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (TDD)

Use the message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with the following exceptions:

Information Element	Value/remark
Downlink information for each radio links - Primary CCPCH info - Cell parameters ID	Not Present

CELL UPDATE (Step 4)

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

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI Cell Update Cause	Assigned previously in cell 1 Assigned previously in cell 1 "cell reselection"

CELL UPDATE CONFIRM (Step 5)

The contents of CELL UPDATE CONFIRM message is identical as "CELL UPDATE CONFIRM message" as found in Annex A for FDD and Annex A for TDD. with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 4
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

8.2.6.16.5 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" in cell 2.

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

After step 6 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.6.17 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (code modification): Success (Subsequently received)

8.2.6.17.1 Definition

8.2.6.17.2 Conformance requirement

If the UE receives a PHYSICAL CHANNEL RECONFIGURATION message before the UE reconfigures the radio bearer according to the previous PHYSICAL CHANNEL RECONFIGURATION message, the UE shall ignore the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigure according to the previous PHYSICAL CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6, clause 8.6.3.11.

8.2.6.17.3 Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message before the UE reconfigures the radio bearer according to the previous PHYSICAL CHANNEL RECONFIGURATION message it ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.17.4 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 the CELL_DCH state. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous PHYSICAL CHANNEL RECONFIGURATION message elapses, the UE ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	For FDD mode the "Secondary scrambling code is set to "1". For TDD mode a code combination is assigned by SS.
2	←		PHYSICAL CHANNEL RECONFIGURATION	SS send this message before the expiry of "activation time" specified in PHYSICAL CHANNEL RECONFIGURATION message of step 1. For FDD, the IE "Secondary scrambling code" is set to "2". For TDD, the code combination assigned is different to that assigned in stage 1.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE ignores the PHYSICAL CHANNEL RECONFIGURATION message in step 2 and confirms configuration according to the PHYSICAL CHANNEL RECONFIGURATION message in step 1.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A for FDD and Annex A for TDD with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Scrambling code number~~Secondary scrambling code~~	1

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- First timeslot code list	Assigned in step 1

PHYSICAL CHANNEL RECONFIGURATION (Step 2) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH info	Not Present
- Scrambling code number~~Secondary scrambling code~~	2

PHYSICAL CHANNEL RECONFIGURATION (Step2) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes	Not Present
- First timeslot code list	A different code combination to that used in step 1.

8.2.6.17.5 Test requirement

After step 2 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.6.18 Physical channel reconfiguration for transition from CELL_FACH to CELL_DCH: Success (Subsequently received)

8.2.6.18.1 Definition

8.2.6.18.2 Conformance requirement

If the UE receives a PHYSICAL CHANNEL RECONFIGURATION message before the UE reconfigures the radio bearer according to the previous PHYSICAL CHANNEL RECONFIGURATION message, the UE shall ignore the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigure according to the previous PHYSICAL CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6, clause 8.6.3.11.

8.2.6.18.3 Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message before the UE reconfigures the radio bearer according to the previous PHYSICAL CHANNEL RECONFIGURATION message it ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message.

8.2.6.18.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to invoke the UE to transit from CELL_DCH to CELL_FACH. The UE shall reconfigure the common physical channel correctly according to this message. To complete this procedure, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before the activation time specified in the previous PHYSICAL CHANNEL RECONFIGURATION message, the UE ignores the new PHYSICAL CHANNEL RECONFIGURATION message and reconfigures according to the previous PHYSICAL CHANNEL RECONFIGURATION message received. Finally, the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	PHYSICAL CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE enters CELL_FACH state.
4		←	PHYSICAL CHANNEL RECONFIGURATION	The "Secondary scrambling code is set to "1" for FDD mode and A code combination is assigned by SS for TDD
5		←	PHYSICAL CHANNEL RECONFIGURATION	SS send this message before the expiry of "activation time" specified in PHYSICAL CHANNEL RECONFIGURATION message of step 4. For FDD the IE "Secondary scrambling code" is set to "2". For TDD, the code combination assigned is different from that assigned in stage 4.
6	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE ignores the PHYSICAL CHANNEL RECONFIGURATION message in step 5 and confirms configuration according to the PHYSICAL CHANNEL RECONFIGURATION message in step 4.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A.

PHYSICAL CHANNEL RECONFIGURATION (Step 4) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A for FDD and Annex A for TDD with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time Info - Uplink DPCH info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256
- Scrambling code number~~Secondary scrambling code~~	1

PHYSICAL CHANNEL RECONFIGURATION (Step 4) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" as found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256 Assigned in step 1

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (FDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH info	Not Present
- Scrambling code number~~Secondary scrambling code~~	2

PHYSICAL CHANNEL RECONFIGURATION (Step 5) (TDD)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Activation Time - Uplink DPCH timeslots and codes - First timeslot code list	Not Present A different code combination to that used in step 1.

8.2.6.18.5 Test requirement

After step 2 the UE shall transit from CELL_DCH to CELL_FACH and transmit a PHYSICAL CHANNEL RECONFIGURATION message on the common physical channel.

After step 5 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.6.19 Physical Channel Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.6.19.1 Definition

8.2.6.19.2 Conformance requirement

The UE shall transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after it receives a PHYSICAL CHANNEL RECONFIGURATION message which invokes the UE to transit from CELL_DCH to CELL_PCH. And then, the UE shall enter CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.19.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and enter CELL_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH.

8.2.6.19.4 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 PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters 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		←	PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in CELL_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message with a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (TDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

PAGING TYPE 1 (Step 4)

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	UTRAN identity
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.6.19.5 Test requirement

After step 1 the UE shall transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

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

8.2.6.20 Physical Channel Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.6.20.1 Definition

8.2.6.20.2 Conformance requirement

The UE shall transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message after it receives a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to URA_PCH. And then, the UE shall reconfigure radio bearers according to the PHYSICAL CHANNEL RECONFIGURATION message and enter URA_PCH state.

Reference

3GPP TS 25.331 clause 8.2.6.

8.2.6.20.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and enter URA_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to URA_PCH.

8.2.6.20.4 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 the CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invoke the UE to transit from CELL_DCH to URA_PCH. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters URA_PCH state. The SS transmits a PAGING TYPE 1 message, 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		←	PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
3				The UE is in URA_PCH state.
4		←	PAGING TYPE 1	The SS transmits this message with a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (FDD)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A with following exceptions:

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

PHYSICAL CHANNEL RECONFIGURATION (Step 1) (TDD)

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

PAGING TYPE 1 (Step 4)

Use the same message sub-type titled "TM (SMS in PS)" in Annex A for FDD and Annex A for TDD with following exceptions:

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

8.2.6.20.5 Test requirement

After step 1 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

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

8.2.6.21 Physical Channel Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.6.21.1 Definition

8.2.6.21.2 Conformance requirement

1. In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

    - transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC;

2. If the new state is CELL_PCH or URA_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

    - when RLC has confirmed the successful transmission of the response message:

        - for each radio bearer in the variable PDCP_SN_INFO:

            - if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

                - configure the RLC entity for that radio bearer to "continue";

    - enter the new state (CELL_PCH or URA_PCH, respectively);

Reference

3GPP TS 25.331 clause 8.2.2.4

8.2.6.21.3 Test purpose

1. To verify that the UE, when receiving a PHYSICAL CHANNEL RECONFIGURATION message, responds by transmitting a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

2. To verify that the response message is transmitted using the old configuration before the state transition, and that the UE enters the URA_PCH state.

8.2.6.21.4 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. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using AM RLC and enters into URA_PCH state. The SS transmits a PAGING TYPE 1 message and the UE accepts it and enters the CELL_FACH state again.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Physical Channel after state transition.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

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

PAGING TYPE 1 (Step 4)

Use the same message sub-type titled "TM (SMS in PS)" in Annex A with following exceptions:

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

8.2.6.21.5 Test requirement

1. After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

2. In step 5 the UE shall transmit a CELL UPDATE message.

8.2.6.22 Physical Channel Reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.6.22.1 Definition

8.2.6.22.2 Conformance requirement

1. In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

- transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC;

2. If the new state is CELL_PCH or URA_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

- when RLC has confirmed the successful transmission of the response message:

- for each radio bearer in the variable PDCP_SN_INFO:

- if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

- configure the RLC entity for that radio bearer to "continue";

- enter the new state (CELL_PCH or URA_PCH, respectively);

Reference

3GPP TS 25.331 clause 8.2.2.4

8.2.6.22.3 Test purpose

1. To verify that the UE, when receiving a PHYSICAL CHANNEL RECONFIGURATION message, responds by transmitting a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

2. To verify that the response message is transmitted using the old configuration before the state transition, and that the UE enters the CELL_PCH state.

8.2.6.22.4 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. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the SS using AM RLC and enters into CELL_PCH state. The SS transmits a PAGING TYPE 1 message and the UE accepts it and enters the CELL_FACH state again.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Physical Channel after state transition.
4		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
5	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in Annex A with following exceptions:

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

PAGING TYPE 1 (Step 4)

Use the same message sub-type titled "TM (Packet in PS)" in default message content of TS34.108 with following exceptions:

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

8.2.6.22.5 Test requirement

1. After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

2. In step 5 the UE shall transmit a CELL UPDATE message.

8.2.7 Physical Shared Channel Allocation [TDD only]

[Editor's note: This message is not included in Release99 so this is FFS.]

8.2.8 PUSCH capacity request [TDD only]

[Editor's note: This message is not included in Release99 so this is FFS.]

8.2.9 Void

3GPP TSG- T1 Meeting #15   *T1-020331*
Lund, Sweden, 21ˢᵗ, 24ᵗʰ May 2002

3GPP TSG- T1 SIG Meeting #23   *T1S-020241r2*
Lund, Sweden, 21ˢᵗ – 23ʳᵈ May 2002

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** | **CR** | **206** | ⌘**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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Corrections to Measurement test cases
Source: ⌘	MCI, Motorola
Work item code: ⌘	TEI ***Date:*** ⌘ 17/5/2002
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 <u>TR 21.900</u>.

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. Merge corrections that were approved in T1/SIG #22 meeting into this document. 2. The CPICH_Ec value in the multiple cells table should fulfil the side conditions as specified in TS 25.133 so as to ensure that the UE behaves correctly. 3. Traffic volume measurement for RB 0 is not needed because the status of this RB is used for in the decision making of the reconfiguration of resources. 4. Editorial.

Summary of change: ⌘	**New corrections**
	
	1. In clause 8.4.1.6, the remarks in step of the expected sequence, is revised to exclude the amount of time SS has to wait for the UE to reselect to the new cell.
	
	2. Clause 8.4.1.7:
	  • Conformance requirement is updated.
	  • References are updated.
	  • The values of CPICH_Ec in cell 3 are changed to −75 dBm/3.84 MHz.
	
	3. Clause 8.4.1.16, clause 8.4.1.17, clause 8.4.1.18, clause 8.4.1.19, clause 8.4.1.20 and clause 8.4.1.21:

- The entry for RB 0 in the MEASUREMENT REPORT messages is removed.

4. Clause 8.4.1.19
   - References are added.

5. Clause 8.4.1.17
   - IE "Measurement Command" in MEASUREMENT CONTROL message in step 7 is revised to "Modify". The current value "Reconfigure" is incorrect. Some editorial corrections in this message.

6. Clause 8.4.1.14
   - The value of reporting range in MEASUREMENT CONTROL message in step 5 is change to 12 dB, so that only the measured CPICH RSCP of cell 3 can trigger the measurement report instead of both cell 2 and 3.
   - Revision 1 correction is highlighted in grey. The value of reporting range in MEASUREMENT CONTROL message in step 11 is change to 12 dB, so that only the measured CPICH RSCP of cell 3 can trigger the measurement report instead of both cell 2 and 3.

Approved corrections in T1/SIG #22 meeting (highlighted in yellow)

From T1S-020135r1 020136 – Correction to clause 8.3 4 of TS 34.123-1 (MCI)

1. Reference message title "Non speech in CS" and "Speech in CS" are added in step 5 of clause 8.4.1.11, 8.4.1.12 and 8.4.1.13, so that these test cases are applicable in CS mode.

2. In clause 8.4.1.4, when UE re-select to a new cell, UE needs a new C-RNTI value, otherwise the UE will keep performing cell update procedure. Therefore in step 9, IE "New C-RNTI" is added and step 10 is added to ensure UE replies with UTRAN MOBILITY INFORMATION CONFIRM message. The same correction applies to step 16 of clause 8.4.1.6, step 23 of clause 8.4.1.7 and step 5 of both clause 8.4.1.20 and 8.4.1.21.
3. Message content in step 3 of clause 8.4.1.26, line feed is added to align the parameters.
4. In the test procedure of clause 8.4.1.14, the reporting range in step 5 does not match the value in the message content, therefore it is revised to be the same as the message content.
5. Missing IE in IE "Radio link addition information" are added in all the ACTIVE SET UPDATE messages.

From T1S-020141 – Correction to the setting of IE "UTRAN DRX cycle length coefficient" (ASUSTek)

1. 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".

From T1S-020144 – Correction to the IE "Cells for measurement" in SIB 11/12 (ASUSTek)

1. In Specific Message Contents, remove all IE "Cell for measurement" from IE "Inter-frequency cell info list" and "Intra-frequency cell info list" when sent in SIB11/12.

		Revision 2 corrections: IE "Cell identity" is checked to be absent in all MEASUREMENT REPORT messages. Conformance requirements are revised to remove ambiguous declaration of references in the statements.
Consequences if not approved:	⌘	The test prose cannot test UE correctly.

Clauses affected:	⌘	

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

Other comments:	⌘	Affects R'99 and R'4 UE test cases.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

8.4 Measurement procedure

8.4.1 Measurement Control and Report

8.4.1.2 Measurement Control and Report: Inter-frequency measurement for transition from idle mode to CELL_DCH state

8.4.1.2.1 Definition

8.4.1.2.2 Conformance requirement

After entering CELL_DCH state from idle mode, the UE shall stop monitoring the list of cells assigned in the IE "inter-frequency cell info" IE in System Information Block 11 or 12 messages. In CELL_DCH state, when the UE receives a MEASUREMENT CONTROL message requesting for a measurement of inter-frequency measurement type to be setup, it shall start inter-frequency measurement and the associated reporting activities if "DPCH compressed mode status info" IE in the message simultaneously activates at least one compressed mode pattern sequence. When the UE receives a MEASUREMENT CONTROL message with "Reporting cell status" IE omitted, it shall not include "Cell measured results" IE for any cells in MEASUREMENT REPORT messages sent on uplink DCCH.

Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.4.1.8.2 and 8.6.7.9

8.4.1.2.3 Test Purpose

To confirm that the UE stops monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 messages, after it enters CELL_DCH state from idle mode. To confirm that the UE starts to perform inter-frequency measurement and related reporting activities, when it receives a MEASUREMENT CONTROL message with the "DPCH compress mode status info" IE indicating that a stored compressed mode pattern sequence be simultaneously activated. To confirm that the UE excludes the IE "cell measured results" for any cells in the MEASUREMENT REPORT messages, after it receives a MEASUREMENT CONTROL message with "Reporting cell status" IE omitted.

8.4.1.2.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active..

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.2-1 illustrates the downlink power to be applied for the 2 cells.

Table 8.4.1.2-1

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec	dBm/ 3.84 MHz	-60	-75

The UE is initially at idle mode and has selected cell 1 for camping. The System Information Block type 11 messages are modified with respect to the default settings to prevent reporting of "Cell synchronisation information", and also to include cell 4 into "inter-frequency cells info list" IE.

SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. SS and UE shall execute procedure P3 (for CS service) or P5 (for PS service). The RRC CONNECTION SETUP message used in procedure P3 or P5 should contain IE "DPCH compressed mode info", activating the transmission pattern gap sequence with TGPSI=1. Next SS and UE shall execute procedure P7 (for CS service) or P9 (for PS service). Then SS and UE shall execute procedure P11 (for CS service) or P13 (for PS service).The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings for cells listed in the IE "inter-frequency cell info list" in System Information Type 11.

SS sends PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH, specifying that compressed mode sequence pattern with TGPSI=1 be deactivated. The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH. It shall stop compressed mode operations at the activation time stated in PHYSICAL CHANNEL RECONFIGURATION message. After the activation time has elapsed, SS sends MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS requests UE to perform inter-frequency measurement with periodic reporting of CPICH RSCP values for cell 4. The "DPCH compressed status info" IE in this message activates the transmission gap pattern sequence with TGPSI = 1. The UE shall start inter-frequency measurement and reporting for cell 4's CPICH RSCP values. It shall report this measurement result by transmitting MEASUREMENT REPORT messages on uplink DCCH periodically at 16 seconds interval.

SS sends MEASUREMENT CONTROL message on the downlink DCCH omitting the IE "Reporting cell status". The UE shall send MEASUREMENT REPORT messages on the uplink DCCH, with the IE "Cell measured results" excluded in these messages.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1.System Information Block Type 11 to be transmitted is different from the default settings (see specific message contents)
2		↔	SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	SS prompts the operator to make an outgoing call.
3		↔	SS executes procedure P7 (clause 7.4.2.3.2) or P9 (clause 7.4.2.4.2) specified in TS 34.108.	
4		↔	SS executes procedure P3 (clause 7.4.2.1.2) or P5 (clause 7.4.2.2.2) specified in TS 34.108.	
5			Void	
6				SS checks to see that no MEASUREMENT REPORT messages are received.
7		←	PHYSICAL CHANNEL RECONFIGURATION	Existing compressed mode sequence pattern is de-activated in this message.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall remain in CELL_DCH state.
9		←	MEASUREMENT CONTROL	SS requests UE to start inter-frequency measurement for cell 4, and performing periodic reporting for cell 4's CPICH RSCP. "DPCH compressed mode status info" IE is set to simultaneously activate compressed mode pattern.
10	→		MEASUREMENT REPORT	UE shall report cell 4's CPICH RSCP reading periodically.
11		←	MEASUREMENT CONTROL	SS changes the reporting criteria of cell 4 to 'event 2c'. "Reporting cell status" IE in this message is omitted.
12	→		MEASUREMENT REPORT	SS monitors the uplink DCCH to make sure that only 1 such message is received 32 seconds after step 11. This message shall not contain IE "Inter-frequency cell measured results"

Specific Message Content

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

System Information Block type 11 (Step 1)

Information Element	Value/Remark
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	Set to the uplink UARFCN of cell 4
- UARFCN downlink (Nd)	Set to the downlink UARFCN of cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115dBm
- Cells for measurement	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

RRC CONNECTION SETUP (Step 2)

Use the message found in TS 34.108 clause 9, with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	Single TPC
- CHOICE Mode	FDD
- Power offset $P_{Pilot\text{-}DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Refer to the parameter set in TS 34.108
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	0
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/remark
CHOICE *channel requirement*	Uplink DPCH info
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- Scrambling code type	Long
- Scrambling code number	0
- Number of DPDCH	Not Present (Use default value of 1)
- Spreading factor	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present (Use default value of 0)
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (single)
- CHOICE mode	FDD
- Power offset $P_{Pilot-DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	Flexible
- TFCI existence	TRUE
- Number of bits for Pilot bits (SF=128,256)	Not Present
- DPCH compressed mode info	
- Transmission gap pattern sequence	
- TGPSI	1
- TPGS status Flag	Inactive
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
Downlink information per radio link list	Not Present

MEASUREMENT CONTROL (Step 9)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cell within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	
TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

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 "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Additional Measured results	Check to see if it is absent
Event Results	Check to see if it is absent

MEASUREMENT CONTROL (Step 11)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not Present
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	0.5 dB
- Time to trigger	0 milliseconds
- Reporting cell status	Not Present
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non used frequency	0
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Additional Measured Results	Check to see if it is absent
Event Results	
- CHOICE event result	Check to see if this IE is set to "Intra-frequency measurement event results"
- Inter-frequency event identity	Check to see if this IE is set to "2c"
- Inter-frequency cells	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- Non frequency related measurement event results	
- CHOICE Mode	Check to see if set to "FDD"
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code as cell 4

8.4.1.2.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages pertaining to the measurement of CPICH RSCP of cell 4.

After step 9 the UE shall transmit MEASUREMENT REPORT messages on uplink DCCH, reporting cell 4's CPICH RSCP value at periodic time interval of 16 seconds in "inter-frequency cell measurement results" IE.

After step 11 the UE shall transmit only 1 MEASUREMENT REPORT message on the uplink DCCH. In this message, IE "inter-frequency cell measured results" shall be absent.

8.4.1.4 Measurement Control and Report: Inter-frequency measurement for transition from idle mode to CELL_FACH state

8.4.1.4.1 Definition

8.4.1.4.2 Conformance requirement

After entering CELL_FACH state from idle mode, the UE shall start to monitor the cells listed in IE "inter-frequency cell info list" assigned in the System Information Block type 11 or 12 messages.

Reference

3GPP TS 25.331, clause 8.4.1.9.2

8.4.1.4.3 Test Purpose

To confirm that the UE begins to monitor the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 11 or 12 messages, after it enters CELL_FACH state from idle mode. However, it shall not transmit any MEASUREMENT REPORT messages to report measured results for inter-frequency cells.

8.4.1.4.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active.

UE: "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

Table 8.4.1.4-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.4-1

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-60	-75	-75	-60

The UE is initially at idle mode and has selected cell 1 for camping. The System Information Block type 11 messages are modified with respect to the default settings to prevent reporting of "Cell synchronisation information" and also to include cell 4 into the "inter-frequency cell list" IE.

SS prompts the operator to make an outgoing call of a supported traffic class. SS and UE shall execute procedure P6. Next SS and UE shall execute procedure P10. Then SS and UE shall execute procedure P14. The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings for inter-frequency cells belonging to the monitored set. SS re-adjusts its downlink power settings according to columns marked "T1" in table 8.4.1.4-1. This is expected to trigger a cell reselection in the UE. The UE shall send CELL UPDATE message to cell 4 in order to report this event. Upon receiving this message, SS replies with the ~~default~~ CELL UPDATE CONFIRM message, which includes IE "New C-RNTI", on the downlink DCCH. UE shall then reply with a UTRAN MOBILITY INFORMATION CONFIRM message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	The UE is PS-DCCH+DTCH_FACH (state 6-11) in ~~idle mode and camped onto~~ cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2			Void	
3	→		Void	
4		←	Void	

Step	Direction		Message	Comment
	UE	SS		
5	→		Void	
6				SS checks to see that no MEASUREMENT REPORT messages are received.
7				SS reconfigures the downlink transmission power, according to columns "T1" of table 8.4.1.4-1.
8	→		CELL UPDATE	UE shall detect that cell 4 has become stronger than cell 1. It sends this message after re-selecting to cell 4
9	←		CELL UPDATE CONFIRM	Use ~~default~~ message content.
10	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Content

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

System Information Block type 11 (Step 1)

Information Element	Value/Remark
SIB12 Indicator	FALSE
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	Set to uplink UARFCN of cell 4
- UARFCN downlink (Nd)	Set to the downlink UARFCN of cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and re-selection info	
- $Qoffset_{s,n}$	0 dB
- Maximum allowed UL TX power	0 dBm
- HCS neighbouring cell information	Not Present
- Qqualmin, Qrxlevmin	-20dB, -115dBm
- Cells for measurement	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

CELL UPDATE (Step 8)

Information Element	Value/Remarks
U-RNTI	Check to see if set to same U-RNTI assigned during the execution of procedure P6.
Cell update cause	Check to see if it is set to "Cell Reselection"
Protocol error info	Check to see if it is absent or set to FALSE
Measured results on RACH	Check to see if it is absent
Protocol error information	Check to see if it is absent

CELL UPDATE CONFIRM (Step 9)

Use the message sub-type in default message content defined in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 10)

Only the message type is checked.

8.4.1.4.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages pertaining to any measurement quantities for cell 4.

After step 7 the UE shall reselect to cell 4 and transmit a CELL UPDATE message on the uplink CCCH of cell 4.

After step 9, the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on uplink DCCH AM RLC.

8.4.1.6 Measurement Control and Report: Inter-frequency measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.6.1 Definition

8.4.1.6.2 Conformance requirement

When transiting from CELL_DCH state to CELL_FACH state, the UE shall stop all measurement reporting activities related to inter-frequency measurements assigned in a MEASUREMENT CONTROL message. After a transition from CELL_DCH state to CELL_FACH state, the UE shall begin to monitor cells listed in the IE "inter-frequency cell info" in the System Information Block type 11 or 12 messages.

Reference

3GPP TS 25.331, clause 8.4.1.6.2

8.4.1.6.3 Test Purpose

To confirm that UE ceases inter-frequency type measurement reporting assigned in MEASUREMENT CONTROL message when moving from CELL_DCH state to CELL_FACH. To confirm that the UE begins to monitor the cells listed in "inter-frequency cell info" received in System Information Block type 11 or 12 messages, following a state transition from CELL_DCH state to CELL_FACH state.

8.4.1.6.4 Method of test

Initial Condition

System Simulator: 2 cells – 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 8.4.1.6-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this clause.

Table 8.4.1.6-1

Parameter	Unit	Cell 1		Cell 4	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-60	-75	-75	-60

The UE is initially in CELL_DCH state. The System Information Block type 11 message is modified with respect to the default settings, so that no measurement tasks are required of the UE. SS transmits PHYSICAL CHANNEL RECONFIGURATION message. In this message, IE "DPCH compressed mode info" is present, which indicates that the UE shall apply the given parameters for compressed mode operations. The UE shall return a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to acknowledge that compressed mode mechanism can be exercised.

SS sends a MEASUREMENT CONTROL message to the UE, including cell 4 into the IE "inter-frequency cell info". The IE "CHOICE reporting criteria" in this message is set to "periodic reporting criteria". SS waits for 8 seconds to allow the periodic timer to expire. The UE shall send a MEASUREMENT REPORT message containing IE "inter-frequency cell measurement results" to report cell 4'sRSCP value. SS transmits PHYSICAL CHANNEL RECONFIGURATION message again and reconfigures common physical channels. The UE shall return a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then move to CELL_FACH state.

SS modifies the contents of Master Information Block (MIB) and System Information Block (SIB) type 11. In SIB 11, cell 4 is added to the cells listed in the "inter-frequency cell info" IE. SS transmit SYSTEM INFORMATION CHANGE INDICATIONmessage to UE. SS waits for 8 seconds to detect any uplink MEASUREMENT REPORT messages. SS verifies that no MEASUREMENT REPORT message(s) are received as a result of inter-frequency measurements. SS then reconfigures the downlink transmission power settings of cell 1 and cell 4 according to the values stated in columns "T1" of table 8.4.1.6-1. SS waits for [x] seconds to allow the UE to perform cell re-selection. The UE shall transmit a CELL UPDATE message on the uplink CCCH of cell 4, specifying the "cell update cause" IE as "cell re-selection". SS replies with CELL UPDATE CONFIRM message, which includes IE "New C-RNTI", on the downlink DCCH to complete the cell update procedure. The UE shall reply with a UTRAN MOBILITY INFORMATION CONFIRM message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	UE is CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) in cell 1. System Information Block type 11 is modified with respect to the default settings. All measurement and reporting activities are disabled in this message.
2			Void	
3	→		Void	
4		←	Void	
5	→		Void	
6		←	PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation.
7	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall remain in CELL_DCH state.
8		←	MEASUREMENT CONTROL	SS indicates that the CPICH RSCP of cell 4 shall be monitored and reported. SS waits for 8 seconds for the reception of MEASUREMENT REPORT message.
9	→		MEASUREMENT REPORT	UE shall transmit this message to report cell 4's CPICH RSCP value.
10		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures common physical channels.
11	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall moves to CELL_FACH state.
12		←	Master Information Block, System Information Block type 11	SS modifies MIB and SIB 11. Cell 4 is included in the IE "inter-frequency cell info"
13		←	SYSTEM INFORMATION CHANGE INDICATION	SS waits for 8 seconds to verify that no MEASUREMENT REPORT messages are detected on the uplink DCCH.
14				SS changes the power settings for cell 1 and cell 4 according to columns marked "T1" of table 8.4.1.6-1, and then waits for ~~[x] seconds to allow~~ the UE to re-select to a new cell.
15	→		CELL UPDATE	UE shall perform cell re-selection and transmit this message on the new cell.
16		←	CELL UPDATE CONFIRM	See message content.
17	→		UTRAN MOBILITY INFORMATION CONFIRM	

NOTE: The value [x] seconds is to be calculated from TS 25.133 clause 5.5.2. The maximum allowable time for cell re-selection duration is governed by the requirements in TS 25.304 and TS 25.133.

Specific Message Content

System Information Block Type 11 (Step 1)

Information Element	Value/Remark
References to other system information blocks	Not Present
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE Internal measurement system information	Not Present

RRC CONNECTION SETUP (Step 4)

Use the same message sub-type found in Clause 9 of TS 34.108, which is entitled "Transition to CELL_DCH"

PHYSICAL CHANNEL RECONFIGURATION (Step 6)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset PPilot-DPDCH	0
- DL rate matching restriction information	Not Present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	0
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	8 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 9)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 10)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)".

Master Information Block (Step 12)

Information Element	Value/Remarks
MIB value tag	2

System Information Block type 11 (Step 12)

Information Element	Value/Remarks
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_- quality_measure	CPICH_Ec/No
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE Inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	4
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink (Nu)	Set to uplink UARFCN for cell 4
- UARFCN downlink (Nd)	Set to downlink UARFCN for cell 4
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the scrambling code of cell 4
- Primary CPICH Tx power	Not Present
- TX diversity indicator	FALSE
- ~~Cells for measurement~~	~~Not Present~~
- Cell selection and re-selection info	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 13)

Information Element	Value/Remarks
BCCH modification info	
- MIB Value tag	2

CELL UPDATE (Step 15)

Information Element	Value/Remarks
U-RNTI	Check to see if same to value assigned in P3 or P5
Cell update cause	Check to see if it is set to "Cell Reselection"
Protocol error info	Check to see if it is absent or set to FALSE
Measured results on RACH	Check to see if it is absent
Protocol error information	Check to see if it is absent

CELL UPDATE CONFIRM (Step 16)

Use the same message sub-type found in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 17)

Only the message type is checked.

8.4.1.6.5   Test Requirement

After step 8 the UE shall transmit MEASUREMENT REPORT message to report cell 4's RSCP value in the IE "inter-frequency cell measured results".

After step 11 the UE shall stop sending MEASUREMENT REPORT messages, which contain inter-frequency measured results for cell 4's CPICH RSCP value.

After step 14 the UE shall transmit CELL UPDATE message on the uplink CCCH of cell 4, and the "cell update cause" IE shall be set to "cell reselection".

After step 16, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.

8.4.1.7   Measurement Control and Report: Intra-frequency measurement for transition from CELL_FACH to CELL_DCH state

8.4.1.7.1   Definition

8.4.1.7.2   Conformance requirement

After transiting from CELL_FACH state to CELL_DCH state, the UE shall retrieve each set of measurement control information of measurement type "intra-frequency", if the measurement control information has "measurement validity" IE set to "CELL_DCH". If the UE has performed a cell reselection whilst out of CELL_DCH state and that the cell reselection has occurred after the storage of measurement control information, the UE shall delete the stored intra-frequency measurement information.

If the UE has no stored intra-frequency measurements applicable to CELL_DCH state, it shall continue to monitor the list of cells in IE "intra-frequency cell info" stated in System Information Block type 11 or 12 messages. It shall transmit MEASUREMENT REPORT messages when the reporting criteria in IE "intra-frequency measurement reporting criteria" in System Information Block type 11 or 12 messages are fulfilled. When in CELL_DCH state, the UE shall override existing measurement and reporting contexts obtained from System Information Block type 11 or 12 messages, if a MEASUREMENT CONTROL message is received. The UE shall start to use the new measurement and reporting parameters received in the MEASUREMENT CONTROL message.

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

 1> retrieve each set of measurement control information of measurement type "intra-frequency" stored in the variable MEASUREMENT_IDENTITY;

 1> if the IE "measurement validity" for a measurement has been assigned the value "CELL_DCH:

  2> resume the measurement reporting.

 1> if no intra-frequency measurements applicable to CELL_DCH state are stored in the variable MEASUREMENT_IDENTITY:

  2> continue monitoring the list of neighbouring cells assigned in the IE "intra-frequency cell info list" in System Information Block type 12 (or System Information Block type 11);

  2> if the IE "intra-frequency measurement reporting criteria" was included in System Information Block type 12 (or System Information Block type 11):

3> send the MEASUREMENT REPORT message when reporting criteria in IE "Reporting information for state CELL_DCH" are fulfilled.

…

Upon cell reselection while in CELL_FACH/CELL_PCH/URA/PCH state and the cell reselection has occurred after the measurement control information was stored, the UE shall:

 1> delete all measurements of type intra-frequency, inter-frequency, and inter-RAT associated with the variable MEASUREMENT_IDENTITY;

1> delete the traffic volume measurements that have not been set up or modified through a MEASUREMENT CONTROL message.

…

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

    1> read the IE "Measurement command";

    1> if the IE "Measurement command" has the value "setup":

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

        2> for measurement types "inter-RAT measurement" or "inter-frequency measurement":

           …

        2> for measurement type "UE positioning measurement":

           …

        2> for any other measurement type:

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

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

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

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

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

               4> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:

                  …

               4> for any other measurement type:

                  5> replace the corresponding information stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message;

                  5> resume the measurements according to the new stored measurement control information.

           3> otherwise:

              …

        2> for all optional IEs that are not present in the MEASUREMENT CONTROL message:

           3> leave the currently stored information elements unchanged in the variable MEASUREMENT_IDENTITY if not stated otherwise for that IE.

    1> if the IE "measurement command" has the value "release":

        2> terminate the measurement associated with the identity given in the IE "measurement identity";

        2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.

Reference

3GPP TS 25.331, clause <u>8.4.1.3, 8.4.1.6a and </u>8.4.1.7.1

8.4.1.7.3 Test Purpose

- To confirm that UE retrieves stored measurement control information for intra-frequency measurement measurement type with "measurement validity" assigned to "CELL_DCH", after it enters CELL_DCH state from CELL_FACH state.

- To confirm that the UE continues to monitor the neighbouring cells listed "intra-frequency cell info" IE in the System Information Block type 11 or 12 messages, if no intra-frequency measurements applicable to CELL_DCH are stored.

- To confirm that the UE transmits MEASUREMENT REPORT messages if reporting criteria stated in IE "intra-frequency measurement reporting criteria" in System Information Block type 11 or 12 messages are fulfilled.

- To confirm that a MEASUREMENT CONTROL message received in CELL_DCH state overrides the measurement and associated reporting contexts maintained in the UE by virtue of System Information Block type 11 or 12 messages.

8.4.1.7.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

UE: PS-DCCH+DTCH_FACH (state 6-11).

Test Procedure

Table 8.4.1.7-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.7-1

Para-meter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
CPICH Ec	dBm /3.84 MHz	-60	-122	-70	-60	-~~80~~75	- ~~80~~75

The UE is brought to CELL_FACH state in cell 1. System Information Block type 12 message is changed with respect to the default message contents, with cell 2 included in the IE "intra-frequency cell info". Event 1e is selected in IE "Reporting information for state CELL_DCH", and "Intra-frequency measurement quantity" is set to CPICH RSCP.

SS send a RADIO BEARER RECONFIGURATION message to UE, and configures dedicated physical channels on both uplink and downlink directions. The UE shall move to CELL_DCH state and then return RADIO BEARER RECONFIGURATION COMPLETE message. The UE shall send MEASUREMENT REPORT messages containing IE "Measured results" to report cell 2's CPICH RSCP value and IE "event results" to report triggering of event type "1e". After receiving the MEASUREMENT REPORT messages, SS transmits a MEASUREMENT CONTROL message with only cell 3 included in the IE "intra-frequency cell info" and IE "CHOICE reporting criteria" set to "periodic reporting". After receiving such a message, the UE shall transmit another set of MEASUREMENT REPORT messages. SS verifies that only measurement readings for cell 3 's CPICH RSCP are report in IE "cell measured results" in these messages.

Next, SS sends PHYSICAL CHANNEL RECONFIGURATION message. SS configures common physical channels for both the uplink and the downlink directions. The UE shall transit to CELL_FACH state and then reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE. SS waits for 16 seconds and checks the uplink RACH to confirm that no MEASUREMENT REPORT messages are received. SS transmits MEASUREMENT CONTROL message on the downlink DCCH. The key parameters specified in this message are: measurement command = 'setup', measurement type = 'intra-frequency measurement', measurement object = 'cell 2', reporting criteria = 'periodic reporting', measurement validity IE is present and "UE state" = "CELL_DCH". SS waits for 16 seconds, verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH. SS sends RADIO BEARER RECONFIGURATION message and configures dedicated physical channels. The UE shall return to CELL_DCH state, transmit a RADIO BEARER RECONFIGURATION COMPLETE message and start to monitor cell 2. The UE shall also resume periodic reporting of cell 2's CPICH RSCP measured results by sending MEASUREMENT REPORT messages. Following the reception of the MEASUREMENT REPORT message, SS commands the UE using MEASUREMENT CONTROL message to release measurement control information stored in "measurement identity" = 12. Thereafter, SS verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH. After this requirement is satisfied, SS sends MEASUREMENT CONTROL on the downlink DCCH once more. This message is identical to the one sent in step 5 (see specific message content).

SS transmits a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH and configures common physical channel. The UE shall transit to CELL_FACH state and then respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. SS monitor the uplink DCCH once more to verify that no MEASUREMENT REPORT messages are detected. SS modifies the contents of Master Information Block and System Information Block type 12 messages, and then send SYSTEM INFORMATION CHANGE INDICATION message to UE. This is followed by a reconfiguration of the downlink transmission power of the respect cells according to the settings in columns "T1" in table 8.4.1.7-1. SS starts timer T305 and then waits for it to expire. The UE shall discover an "out-of-service" condition and initiate a cell re-selection procedure. This is verified in the SS when a CELL UPDATE message is received on the uplink CCCH with the "cell update cause" IE set to "cell reselection". SS transmits a CELL UPDATE CONFIRM message, which includes "New C-RNTI", on the DCCH ~~to end the cell update procedure~~. Then the UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. Next, SS sends a RADIO BEARER RECONFIGURATION message on the downlink DCCH, assigning dedicated physical channels in both uplink and downlink directions. The UE shall respond with a RADIO BEARER RECONFIGURATION COMPLETE message and then return to CELL_DCH state. SS checks that the UE does not generate any MEASUREMENT REPORT messages on the uplink DCCH.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 12	UE is initially in PS-DCCH+DTCH_FACH (state 6-11) in cell 1. System Information Block type 12 messages are changed with respect to the default contents according to the descriptions in "Specific Message Contents" clause.
2		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
4	→		MEASUREMENT REPORT	Reports cell 2's CPICH RSCP measurement value.
5		←	MEASUREMENT CONTROL	Only cell 3 is included in the IE "intra-frequency cell info".
6	→		MEASUREMENT REPORT	UE shall report cell 3's CPICH RSCP reading in IE "cell measured results".
7		←	PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical channels.
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
9				SS waits for 16 seconds and checks that no MEASUREMENT REPORT messages are sent by UE.
10		←	MEASUREMENT CONTROL	SS instructs the UE to setup intra-frequency measurement and reporting for cell 2. Measurement validity" IE is set to CELL_DCH state.
11				SS waits for 16 seconds and verifies that no MEASUREMENT REPORT messages are sent by UE.
12		←	RADIO BEARER RECONFIGURATION	SS configures dedicated physical channels.
13	→		RADIO BEARER RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state.
14	→		MEASUREMENT REPORT	UE begins to report cell 2's measured results for CPICH RSCP.
15		←	MEASUREMENT CONTROL	Terminate all the intra-frequency measurement and reporting activitiest related to "measurement identity" = 12.
16				SS waits for 16 seconds and verifies that UE stop transmitting MEASUREMENT REPORT messages.
17		←	MEASUREMENT CONTROL	This message is the same as in step 5
18		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates common physical channels.
19	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
20				SS checks that no MEASUREMENT REPORT messages are received.

Step	Direction		Message	Comment
	UE	**SS**		
21		←	Master Information Block System Information Block type 12	System Information Block type 12 messages are modified to include cell 2 and cell 3 into neighbouring cells list for intra-frequency type measurements.
21a		←	SYSTEM INFORMATION CHANGE INDICATION	SS reconfigures the downlink transmission power settings for cell 1 to cell 3 according to columns "T1" in table 8.4.1.7-1, runs timer T305, and then waits until T305 expires.
22		→	CELL UPDATE	UE shall re-selects to cell 2 and then perform a cell update procedure.
23		←	CELL UPDATE CONFIRM	UE shall stay in CELL_FACH state.
23a		→	UTRAN MOBILITY INFORMATION CONFIRM	
24		→	RADIO BEARER RECONFIGURATION	Dedicated physical channels are assigned to the UE in this message.
25		←	RADIO BEARER RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state.
26				SS checks that no MEASUREMENT REPORT messages are received on uplink DCCH.

Specific Message Content

System Information Block type 12 (Step 1)

Information Element	Value/Remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	10
- 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
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
~~- Cells for measurement~~	~~Not Present~~
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity	Not Present
- Intra-frequency measurement for RACH reporting	No report
- Maximum number of reported cells on RACH	
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	No report
- SFN-SFN observed time difference reporting indicator	FALSE
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	
- Reporting quantities for monitored set cells	No report
- SFN-SFN observed time difference reporting indicator	FALSE
- Cell synchronisation information reporting indicator	TRUE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	Not present
- Reporting quantities for detected cells	Intra-frequency measurement reporting criteria
- CHOICE report criteria	
- Parameter required for each event	1e
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	Not present
- Reporting range	Not present
- Cells forbidden to affect reporting	FDD
- CHOICE Mode	
- Primary CPICH Info	
- Primary scrambling code	Set to the scrambling code of cell 2
- W	Not present
- Hysteresis	0 dB
- Threshold used frequency	-80 dBm
- Reporting deactivation threshold	Not present
- Replacement activation threshold	Not present

Information Element	Value/Remark
- Time to trigger	0
- Amount of reporting	Infinity
- Reporting Interval	16 seconds
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

RADIO BEARER RECONFIGURATION (Step 2, Step 12 and Step 24)

Use the same message type found in Annex A, with condition set to A4.

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	~~Check to see if it is present and set to cell identity of cell 2~~Check to see if this IE is absent
- SFN-SFN observed time difference	absent
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 5 and Step 17)

Information Element	Value/Remark
Measurement Identity	10
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells selection and Re-selection info	Not Present
- Cells for measurement	
- Intra-frequency cell id	3
- Intra-frequency measurement quantity	
- Filter Coefficient	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
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 3
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold used frequency	-90 dBm
- Time to Trigger	0

Information Element	Value/Remark
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if this IE is absent ~~Check to see if it is present and set to cell identity of 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 absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	Check to see if it's set to 'Intra-frequency measurement event results'
- CHOICE event result	Check to see if this IE is set to '1e'
- Intra-frequency event identity	
- Cell measurement event results	
- Primary CPICH info	Check to see if it's the same code for cell 3
- Primary scrambling code	

PHYSICAL CHANNEL RECONFIGURATION (Step 7 and 18)

Use the same message sub-type found in Annex A, which is entitled "Packet to CELL_FACH from CELL_DCH in PS".

MEASUREMENT CONTROL (Step 10)

Information Element	Value/Remark
Measurement Identity	12
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra- frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present
- Cells for measurement	
- Intra-frequency cell id	cell 2
- Intra-frequency measurement quantity	
- Filter Coefficient	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
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	
- UE state	CELL_DCH
- CHOICE report criteria	Intra-frequency measurement criteria
- Parameters required for each event	
- Intra-frequency event identity	1e
- Triggering condition 1	Not Present
- Triggering condition 2	Monitored set cells
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	Not Present
- Primary CPICH Info	
- Primary Scrambling Code	Set to the same scrambling code for cell 2
- W	Not Present
- Hysteresis	0 dB
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	Not Present
- Threshold Used Frequency	-80 dBm
- Time to Trigger	0

Information Element	Value/Remark
- Amount of reporting	Infinity
- Reporting interval	16 seconds
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set cells on used frequency
- Maximum number of reported cells	1
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 14)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 12
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	~~Check to see if it is present and set to cell identity of cell 2~~Check to see if this IE is absent
- SFN-SFN observed time difference	
- Cell synchronisation information	Check to see if this IE is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if it's the same code for cell 2
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measurement event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 15)

Information Element	Value/Remarks
Measurement Identity	12
Measurement Command	Release
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE Measurement type	Not Present
DPCH compressed mode status info	Not Present

Master Information Block (Step 21)

Information Element	Value/Remarks
MIB Value Tag	2

System Information Block type 12 (Step 21)

Information Element	Value/Remark
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_- quality_measure	CPICH_Ec/No
- Intra-frequency measurement system information	
- Intra-frequency measurement identity	13
- Intra-frequency cell info list	*Cell 2 and Cell 3 are added*
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency info list	
- Intra-frequency cell id	Set to id of cell 2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
- Intra-frequency cell id	Set to id of cell 3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
~~- Cells for measurement~~	==~~Not Present~~==
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency measurement for RACH reporting	Not Present
- Maximum number of reported cells on RACH	No report
- Reporting information for state CELL_DCH	
- Intra-frequency reporting quantity	CPICH RSCP
- Measurement reporting mode	
- Measurement Reporting Transfer Mode	Acknowledged mode RLC
- Periodic Reporting / Event Triggering Report Mode	Periodic Reporting
- CHOICE report criteria	Perioidical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	250 msec
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

CELL UPDATE (Step 22)

Information Element	Value/Remarks
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
Cell Update Cause	Check to see if set to 'Cell Re-selection'
Protocol error indicator	Check to see if it is absent or set to 'FALSE'
Measured results on RACH	Check to see if it is absent
Protocol error information	Check to see if it is absent

CELL UPDATE CONFIRM (Step 23)

Use the default message content of the same message type in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 23a)

Only the message type is checked.

8.4.1.7.5 Test Requirement

After step 3 the UE shall report cell 2's CPICH RSCP value by transmitting MEASUREMENT REPORT messages.

After step 5 the UE shall delete all measurement and reporting contexts obtained from System Information Block type 12 messages. It shall transmit MEASUREMENT REPORT messages which contain measured results of cell 3's CPICH RSCP value only

After step 9 and step 11 the UE shall not transmit MEASUREMENT REPORT messages, which pertain to intra-frequency type measurement reporting.

After step 13 the UE shall resume the measurement and reporting activities as specified in MEASUREMENT CONTROL message received in step 10. The UE shall transmit MEASUREMENT REPORT messages, containing measured results of cell 2's CPICH RSCP value.

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

After step 21 the UE shall re-select to cell 2 and initiate a cell update procedure. SS shall receive a CELL UPDATE message on the uplink CCCH of cell 2, with the "cell update cause" IE stated as "cell re-selection".

After step 23, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH AM RLC.

After step 25 the UE shall not resume measurements and any associated reporting activities for cell 3's CPICH RSCP, no MEASUREMENT REPORT messages shall be detectable by the SS in the uplink DCCH.

8.4.1.8 Measurement Control and Report: Inter-frequency measurement for transition from CELL_FACH to CELL_DCH state

8.4.1.8.1 Definition

8.4.1.8.2 Conformance requirement

When transiting from CELL_FACH state to CELL_DCH state, the UE shall stop monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 or 12 messages. If the UE has stored measurement control information of type "inter-frequency" for which the IE "measurement validity" is present and the IE "UE state for reporting" has been assigned to "CELL_DCH", it shall resume the stored measurement reporting activities after it has re-entered CELL_DCH state from CELL_FACH state. The UE shall activate or deactivate inter-

frequency measurements by decoding the "DPCH compressed mode status info" IE in MEASUREMENT CONTROL messages.

Reference

3GPP TS 25.331 clause 8.4.1.7.2, 8.4.1.3

8.4.1.8.3 Test Purpose

To confirm that the UE stops monitoring the list of cells assigned in the IE "inter-frequency cell info" in System Information Block type 11 or 12 when it transits from CELL_FACH state to CELL_DCH state. To confirm that the UE resumes inter-frequency measurements and reporting stored for which the measurement control information has IE "measurement validity" assigned to the value "CELL_DCH", after it re-enters CELL_DCH state from CELL_FACH state. To confirm that the UE resumes inter-frequency measurement and reporting activities after it has received a MEASUREMENT CONTROL message specifying that a stored compressed mode pattern sequence be re-activated.

8.4.1.8.4 Method of test

Initial Condition

System Simulator: 3 cells – Cells 1, cell 4 and cell 5 are active.

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 8.4.1.8-1 illustrates the downlink power to be applied for the 3 cells in this test.

Table 8.4.1.8-1

Para-meter	Unit	Cell 1	Cell 4	Cell 5
UTRA RF Channel Number		Ch. 1	Ch. 2	Ch. 2
CPICH Ec	dBm/3.84 MHz	-60	-75	-75

The UE is in CELL_DCH state in cell 1. SS transmits MEASUREMENT CONTROL message to add cell 5 into the IE "inter-frequency cell info". In the MEASUREMENT CONTROL message, the parameters of the IE "inter-frequency measurement reporting criteria" are as follow: event-triggered with event identity ='2c', reporting quantity = "CPICH RSCP", threshold for non-used frequency = '-85 dBm', hysteresis = '1.0dB', time to trigger = '10 seconds', amount of reporting = '1' and reporting interval = '0'. In the same message, IE "Measurement validity" is present and "UE state" is assigned the value 'CELL_DCH'. SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH after it has transmitted the MEASUREMENT CONTROL message.

SS sends a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH and configures PRACH and S-CCPCH physical channels. The UE shall reconfigure itself to receive and transmit using the new common physical channels assigned, and send PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH. SS modifies the content of Master Information Block and System Information Block type 12 messages, such that cell 4 is added in the list of cells assigned in the IE "inter-frequency cell info". SS transmits SYSTEM INFORMATION CHANGE INDICATION message to UE. Once again, SS verifies that the UE does not transmit MEASUREMENT REPORT messages in the uplink direction.

SS sends PHYSICAL CHANNEL RECONFIGURATION message, and configures dedicated physical. In this message, SS commands the UE to start applying compressed mode mechanism for DPCH. The UE shall move to CELL_DCH state and then reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. SS waits for 10 seconds. The UE shall transmit 1 MEASUREMENT REPORT message, containing the selected frequency quality estimate (in this case CPICH RSCP) of cell 5. The UE shall also report the triggering of event '2c' in the IE "Event results" of MEASUREMENT REPORT message. SS verifies that this message does not contain measured results for cell 4.

SS transmitts a MEASUREMENT CONTROL message on the downlink DCCH using AM-RLC. In this message, SS modifies the measurement control information for measurement identity = "14" and set IE "CHOICE reporting criteria" to "periodic reporting criteria".The UE shall transmit MEASUREMENT REPORT messages at 2 seconds interval. SS transmits a PHYSICAL CHANNEL RECONFIGURATION message and deactivates the compressed mode pattern sequence with "TGPSI" IE set to 1. The UE shall respond by sending PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and also stop the periodic reporting activities. Following this, SS sends a MEASUREMENT CONTROL message and re-activates the compressed mode pattern sequence by using the "DPCH compressed mode status" IE. SS confirms that the UE has reconfigured itself to start measurement reporting again. The SS shall be able to receive MEASUREMENT REPORT messages continuously at 2 seconds interval.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The initial state of UE is in CELL_DCH state of cell 1.
2	←		MEASUREMENT CONTROL	SS specifies inter-frequency measurement and reporting parameters for cell 5, with "measurement validity" IE present and "UE state" set to "CELL_DCH".
3				SS checks that no MEASUREMENT REPORT messages are detected on the uplink DCCH.
4	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures PRACH and S-CCPCH physical resources.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
6	←		Master Information Block System Information Block type 12	SS modifies MIB and SIB 12 in order to include cell 4 into the list of cells in IE "inter-frequency cell info".
7	←		SYSTEM INFORMATION CHANGE INDICATION	After SS transmits this message, SS confirms that there are no transmissions of MEASUREMENT REPORT message in the uplink direction.
8	←		PHYSICAL CHANNEL RECONFIGURATION	SS configures dedicated physical channels with compressed mode parameters
9	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
10	→		MEASUREMENT REPORT	UE shall resume inter-frequency measurement task for cell 5 and report the measured CPICH RSCP value for cell 5.
11	←		MEASUREMENT CONTROL	SS changes the reporting criteria for cell 5 to 'periodic reporting'
12	→		MEASUREMENT REPORT	UE shall begin to transmit this message at 2 seconds interval.
13	←		PHYSICAL CHANNEL RECONFIGURATION	SS deactivates the currently used pattern sequence for compressed mode operation.
14	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE stays in CELL_DCH state. SS verifies that no MEASUREMENT REPORT messages are received.
15	←		MEASUREMENT CONTROL	SS activates the pattern sequence stored by the UE.

Step	Direction		Message	Comment
	UE	**SS**		
16		→	MEASUREMENT REPORT	SS checks that MEASURE-MENT REPORT messages are received at 2 seconds interval.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark

Measurement Identity	14
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	
- Frequency info	5
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 5
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 5
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	5
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- Measurement validity	
- UE State	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	1.0 dB
- Time to trigger	10 seconds
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85 dBm
- W non-used frequency	0.0
DPCH compressed mode status info	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type found in Annex A titled "(Packet to CELL_FACH from CELL_DCH in PS)".

Master Information Block (Step 6)

Information Element	Value/Remark
Value Tag	2

System Information Block type 12 (Step 6)

Information Element	Value/Remark
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency cell info list	
- CHOICE inter-frequency cells removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	Set to id of cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
~~ - Cells for measurement~~	~~Not Present~~
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

PHYSICAL CHANNEL RECONFIGURATION (Step 8)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset $P_{Pilot\text{-}DPDCH}$	0
- DL rate matching restriction information	Not Present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not Present
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	Not Present
- TGD	0
- TGPL1	3
- TGPL2	Not Present
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	
- CHOICE event result	Inter-frequency event results
- Inter-frequency event identity	Check to see if it's set to '2c'
- Inter-frequency cells	
- Frequency Info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- Non frequency related measurement event results	
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5

MEASUREMENT CONTROL (Step 11)

Information Element	Value/Remark
Measurement Identity	14
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	5
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 5
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 5
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 5
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	5
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not Present
- Inter-frequency set update	Not Present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	2000 milliseconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 12, 16)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 5
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 5
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 5
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
- CFN-SFN observed time difference	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message transmitted in step 8 with the following modifications:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not Present
- Transmission gap pattern sequence configuration parameters	Not Present

MEASUREMENT CONTROL (Step 15)

Information Element	Value/Remark
Measurement Identity	14
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Not Present
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256

8.4.1.8.5 Test Requirement

After step 2 the UE shall not send any MEASUREMENT REPORT messages on the uplink DCCH of cell 1.

After step 9 the UE shall transmit a MEASUREMENT REPORT message, containing the IE "measured results" reporting cell 5's CPICH RSCP value. The UE shall also report the triggering of event '2c' by including IE "Event

results" in the MEASUREMENT REPORT message. The UE shall not transmit any MEASUREMENT REPORT messages pertaining to cell 4's measurements.

After step 11 the UE shall send MEASUREMENT REPORT messages, containing cell 5's CPICH RSCP measured value in IE "Measured results" at 2 seconds interval. The "Event results" IE shall be omitted in these messages.

After step 14 the UE shall not transmit any MEASUREMENT REPORT messages.

After step 15 the UE shall resume the transmission of MEASUREMENT REPORT messages with identical contents as in those received after step 11.

8.4.1.9 Measurement Control and Report: Unsupported measurement in the UE

8.4.1.9.1 Definition

8.4.1.9.2 Conformance requirement

If the UTRAN instructs the UE to perform a measurement that is not supported by the UE, the UE shall keep the measurement configuration that was valid before the MEASUREMENT CONTROL message was received. Then the UE shall transmit a MEASUREMENT CONTROL FAILURE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.4.1.4

8.4.1.9.3 Test purpose

To confirm that the UE transmits a MEASUREMENT CONTROL FAILURE message, with the value "unsupported measurement" in IE "failure cause" when the SS instructs the UE to perform an unsupported measurement by sending a MEASUREMENT CONTROL message. To confirm that the UE retains its existing valid measurement configuration, after receiving a MEASUREMENT CONTROL message containing an unsupported measurement.

8.4.1.9.4 Method of test

Initial Condition

System Simulator: 1cell

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.

[Editor's note: It is assumed in this test that the UE under test does not possess any inter-RAT measurement capability. The mandatory type(s) of measurement capability that shall be implemented by the UE is to be discussed]

Test Procedure

The UE is in the CELL_DCH state. SS sends MEASUREMENT CONTROL message to command the UE to perform internal measurement and reporting for UE transmitted power. The UE shall transmit MEASUREMENT REPORT messages on DCCH at 1 second interval. The SS transmits a MEASUREMENT CONTROL message to configure inter-RAT measurements. The UE hall transmit a MEASUREMENT CONTROL FAILURE message on the uplink DCCH using AM RLC. SS verifies that the UE continues to transmit MEASURMENT REPORT messages on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state.
2	←		MEASUREMENT CONTROL	UE internal measurement and reporting is requested.
3	→		MEASUREMENT REPORT	Contains estimated reading for UE transmitted power.
4	←		MEASUREMENT CONTROL	Inter-RAT measurements are requested in this message
5	→		MEASUREMENT CONTROL FAILURE	The value "unsupported measurement" is set in IE "failure cause".
6	→		MEASUREMENT REPORT	SS verifies that UE continue to send this message on uplink DCCH.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- CHOICE mode	FDD
- Measurement quantity	UE Transmitted Power
- Filter Coefficient	0
- UE internal reporting quantity	
- UE Transmitted Power	TRUE
- CHOICE mode	FDD
- UE Rx-Tx time difference	FALSE
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	1000 msec
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 3 and Step 6)

Information Element	Value/Remark
Measurement Identity number	Check to see if it's set to '1'
Measured Results	
- CHOICE measurement	Check to see if it's set to "UE internal measured results"
- CHOICE mode	Check to see if it's set to "FDD"
- UE Transmitted Power	Check to see if the reported power is compatible with RF class
- UE Rx-Tx report entries	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Additional Measured results	Check to see if it is absent
Event results	Check to see if it is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
RRC transaction identifier	Select an arbitrary an integer between 0 and 3
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-RAT measurement
- Inter-RAT cell info list	
- CHOICE inter-RAT cell removal	Remove no inter-RAT cells
- New inter-RAT cells	
- Inter-RAT cell id	1
- CHOICE *Radio Access Technology*	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not Present
- BSIC	Set to the BSIC code of cell 2
- BSIC ARFCN	Set to the ARFCN assigned to cell 2
- Output power	Not Present
- Cells for measurement	
- Inter-RAT cell id	2
- Inter-RAT measurement quantity	
- CHOICE system	GSM
- Measurement quantity	GSM Carrier RSSI
- Filter Coefficient	0
- BSIC verification required	Not required
- Inter-RAT reporting quantity	
- UTRAN estimate quantity	FALSE
- CHOICE system	GSM
- Pathloss	FALSE
- Observed time difference to GSM cell	FALSE
- GSM Carrier RSSI	TRUE
- Reporting cell status	Not Present
- CHOICE report criteria	No reporting
DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL FAILURE (Step 5)

Information Element	Value/Remarks
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 4.
Failure cause	Check if it is set to "Unsupported measurement"

8.4.1.9.5   Test requirement

After step 2 the UE shall transmit a MEASUREMENT REPORT messages at 1 second interval. In these messages, the IE "CHOICE measurement" shall be set to "UE internal measured results", and it shall contain the measured UL transmitted power reading in IE "UE Transmitted Power".

After step 4 the UE shall transmit a MEASUREMENT CONTROL FAILURE message. In this message, the value "unsupported measurement" shall be specified in IE "failure cause".

After step 5 the UE shall continue to transmit MEASUREMENT REPORT messages on the uplink DCCH, with the contents of the messages identical to that received by SS after step 2.

8.4.1.10 Measurement Control and Report: Failure (Invalid Message Reception)

8.4.1.10.1 Definition

8.4.1.10.2 Conformance requirement

When the UE received an invalid MEASUREMENT CONTROL message it shall reply with a MEASUREMENT CONTROL FAILURE message stating the appropriate protocol error information. It shall continue its ongoing processes and procedures as if the MEASUREMENT CONTROL message has not been received.

Reference

3GPP TS 25.331 clauses 8.4.1.5 and 9.2

8.4.1.10.3 Test Purpose

To confirm that the UE continues its ongoing processes and procedures after it has received an invalid MEASUREMENT CONTROL message. To confirm that the UE transmits MEASUREMENT CONTROL FAILURE message, after it has received an invalid MEASUREMENT CONTROL message.

8.4.1.10.4 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) in cell 1 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 brought to CELL_DCH. SS transmits a MEASUREMENT CONTROL message to the UE, commanding it to start transmitting report messages for the reporting quantity "UE Transmitted Power". SS waits for the UE to transmit MEASUREMENT RERORT message on the uplink DCCH. After the MEASUREMENT REPORT message is received, SS transmits an invalid MEASUREMENT CONTROL message again. The UE shall reply with MEASURMENT CONTROL FAILURE message as it has detected a protocol error. It shall continue to report its UL transmission power level using MEASUREMENT REPORT messages.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is CELL_DCH state in cell 1.
2		←	MEASUREMENT CONTROL	SS transmits this message on downlink DCCH to instruct UE to start reporting the quantity "UE transmitted power".
3	→		MEASUREMENT REPORT	UE shall send this message periodically at 32 seconds interval
4		←	MEASURMENT CONTROL	See message content.

Step	Direction		Message	Comment
	UE	**SS**		
5	→		MEASUREMENT CONTROL FAILURE	UE shall continue its current measurement and reporting processes and procedures after sending this message.
6	→		MEASUREMENT REPORT	UE shall continue to transmit this message to the SS at 32 seconds interval.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- Measurement quantity	UE Transmitted Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted Power	TRUE
- UE Rx-Tx time difference	FALSE
CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	32 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 3 and Step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
CHOICE measurement	Check to see if set to "UE internal measurement results"
- CHOICE mode	Check to see if it's set to "FDD"
- UE Transmitted Power	Check to see if the reported power is compatible with RF class
- UE Rx-Tx report entries	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 4)

Information Element	Value/Remark
All IEs	Not Present

MEASUREMENT CONTROL FAILURE (Step 5)

Information Element	Value/Remark
Failure cause	Check to see if set to "protocol error"
Protocol error information	Check to see if set to "ASN.1 violation or encoding error"

8.4.1.10.5 Test Requirement

After step 4 the UE shall transmit MEASUREMENT CONTROL FAILURE message, stating the IE "failure cause" as "protocol error" and IE "protocol error information" as "ASN.1 violation or encoding error".

After step 5 the UE shall continue to send MEASUREMENT REPORT, with the measurement identity number set to 3 and "measured results" IE containing measured readings of UE Tx power, at 32 seconds interval.

8.4.1.11 Measurement Control and Report: Compressed Mode Configuration Failure during radio bearer reconfiguration procedure

8.4.1.11.1 Definition

8.4.1.11.2 Conformance requirement

During a radio bearer reconfiguration procedure, the UTRAN might request the activation of a new transmission gap pattern sequence configuration. If the UE detects a runtime error due to overlapping compressed mode configuration, it shall delete the transmission gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate any inter-frequency / inter-RAT measurements corresponding to the deleted transmission gap pattern sequence. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC, with the IE "failure cause" set to "compressed mode runtime error".

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.15

8.4.1.11.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC, if it receives a RADIO BEARER RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences. To confirm that the UE terminate any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence.

8.4.1.11.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.

Test Procedure

Table 8.4.1.11-1 illustrates the downlink power to be applied for the 2 cells in this test case.

Table 8.4.1.11-1

Parameter	Unit	Cell 1	Cell 4
UTRA RF Channel Number		Ch. 1	Ch. 2
CPICH Ec	dBm/ 3.84 MHz	-60	-70

The UE is in the CELL_DCH state in cell 1. SS sends a MEASUREMENT CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH Ec/No value, and also to report the UTRA RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. The UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" on a periodic basis. A deactivated transmission pattern gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a RADIO BEARER RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC. In this message, the value of IE "failure cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks associated with TGPSI=2. The UE shall continue to send MEASUREMENT REPORT messages to report the UTRA RSSI in the UARFCN in which cell 4 resides.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2	←		MEASUREMENT CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. SS commands UE to report the UTRA RSSI in the UARFCN in which cell 4 resides.
3	→		MEASUREMENT REPORT	UE reports UTRA RSSI for the UARFCN of cell 4 periodically.
4	←		MEASUREMENT CONTROL	SS assigns inter-RAT measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2. The IE "TGPS status flag" is set to "Inactive".
5	←		RADIO BEARER RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
8	→		MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH Ec/No
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation reporting indicator	FALSE
- Cell Identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256

MEASUREMENT REPORT (Step 3 and Step 8)

Information Element	Value/Remarks
Measurement identity	Check to see if set to "1"
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is absent
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOISE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	7
CHOISE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOISE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
CHOISE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOISE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOISE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	2
- TGPS status flag	inactive
- TGCFN	Not present

RADIO BEARER RECONFIGURATION (Step 5)

The contents of RADIO BEARER RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" or "Non-speech in CS" or "Speech in CS" found in Annex A with the following exceptions:

Information Element	Value/remark
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	5
- TGD	0
- TGPL1	3
- TGPL2	5
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Failure cause	Checked to see if set to "compressed mode runtime error"
- Protocol error information	Checked to see if it is absent
- Deleted TGPSI	Checked to see if it is set to "2"

8.4.1.11.5 Test requirement

After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".

After step 7 the UE shall continue to send MEASUREMENT REPORT messages periodically, to report the UTRA RSSI value for the UARFCN in which cell 4 resides. The MEASUREMENT REPORT messages sent by the UE shall not contain CPICH RSCP readings for cell 4.

8.4.1.12 Measurement Control and Report: Compressed Mode Configuration Failure during transport channel reconfiguration procedure

8.4.1.12.1 Definition

8.4.1.12.2 Conformance requirement

During a transport channel reconfiguration procedure, the UTRAN might request the activation of a new transmission gap pattern sequence configuration. If the UE detects a runtime error due to overlapping compressed mode configuration, it shall delete the transmission gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate any inter-frequency / inter-RAT measurements corresponding to the deleted transmission gap pattern sequence.The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC, with the cause value in IE "failure cause" set to "compressed mode runtime error".

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.15

8.4.1.12.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC, if it receives a TRANSPORT CHANNEL RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences. To confirm that the UE terminate any measurements corresponding to the deleted transmission gap pattern sequence.

8.4.1.12.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.

Test Procedure

For this test case, the downlink transmission power settings shall follow that specified in table 8.4.1.11-1 in clause 8.4.1.11.4.

The UE is in the CELL_DCH state in cell 1. SS sends a MEASUREMENT CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH Ec/No value, and also to report the UTRA RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. The UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" on a periodic basis. A deactivated transmission pattern gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC. In this message, the value of IE "failure cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks associated with TGPSI=2. The UE shall continue to send MEASUREMENT REPORT messages to report the UTRA RSSI in the UARFCN in which cell 4 resides.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2	←		MEASUREMENT CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. Report the UTRA RSSI in the UARFCN in which cell 4 resides.
3	→		MEASUREMENT REPORT	UE reports UTRA RSSI for the UARFCN of cell 4 periodically.
4	←		MEASUREMENT CONTROL	SS assigns inter-RAT measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2 The IE "TGPS status flag" is set to "Inactive".
5	←		TRANSPORT CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
8	→		MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH Ec/No
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- 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 cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256

MEASUREMENT REPORT (Step 3 and Step 8)

Information Element	Value/Remarks
Measurement identity	Check to see if set to "1"
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is absent
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOISE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	7
CHOISE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOISE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
CHOISE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOISE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOISE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	2
- TGPS status flag	inactive
- TGCFN	Not present

TRANSPORT CHANNEL RECONFIGURATION (Step 5)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" or "Non-speech in CS" or "Speech in CS" found in Annex A with the following exceptions:

Information Element	Value/remark
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	5
- TGD	0
- TGPL1	3
- TGPL2	5
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Failure cause	Checked to see if set to "compressed mode runtime error"
- Protocol error information	Checked to see if it is absent
- Deleted TGPSI	Checked to see if it is set to "2"

8.4.1.12.5 Test requirement

After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".

After step 7 the UE shall continue to send MEASUREMENT REPORT messages periodically, to report the UTRA RSSI value for the UARFCN in which cell 4 resides. The, MEASUREMENT REPORT messages sent by the UE shall not contain CPICH RSCP readings for cell 4.

8.4.1.13 Measurement Control and Report: Compressed Mode Configuration Failure during physical channel reconfiguration procedure

8.4.1.13.1 Definition

8.4.1.13.2 Conformance requirement

During a physical channel reconfiguration procedure, the UTRAN might request the activation of a new transmission gap pattern sequence configuration. If the UE detects a runtime error due to overlapping compressed mode configuration, it shall delete the transmission gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate any inter-frequency / inter-RAT measurements corresponding to the deleted transmission gap pattern sequence. The UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC, with the IE "failure cause" set to "compressed mode runtime error".

Reference

3GPP TS 25.331 clause 8.2.2, clause 8.2.11.2, clause 8.6.6.14

8.4.1.13.3 Test purpose

To confirm that the UE transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC, if it receives a PHYSICAL CHANNEL RECONFIGURATION message which includes IE "DPCH compressed mode info" that causes an illegal overlap involving more than one parallel transmission gap pattern sequences. To confirm that the UE terminate any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence

8.4.1.13.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 and cell 4 are active.

UE: CS-DCCH+DTCH_DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) as specified in TS34.108 clause 7.4, depending on the CN domain supported.

Test Procedure

For this test case, the downlink transmission power settings shall follow that specified in table 8.4.1.11-1 in clause 8.4.1.11.4.

The UE is in the CELL_DCH state in cell 1. SS sends a MEASUREMENT CONTROL message on the downlink DCCH to request the UE to start inter-frequency measurement for cell 4's CPICH Ec/No value, and also to report the UTRA RSSI in the UARFCN in which cell 4 resides. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message.The UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report the RSSI value of UTRA carrier in which cell 4 resides. Next, SS sends a second MEASUREMENT CONTROL message. In this message, a new measurement task is to be established for the measurement and reporting of "GSM carrier RSSI" value on a periodic basis. A deactivated transmission pattern gap sequence configuration (with TGPSI=2) is associated with this new measurement task.

The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. The UE then shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM-RLC. In this message, the value of IE "failure cause" shall be set to "compressed mode runtime error". The UE shall terminate all inter-RAT measurement tasks associated with TGPSI=2. The UE shall continue to send MEASUREMENT REPORT messages to report the UTRA RSSI in the UARFCN in which cell 4 resides.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2	←		MEASUREMENT CONTROL	SS starts inter-frequency measurements for cell 4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1. SS commands UE to report the UTRA RSSI in the UARFCN in which cell 4 resides.
3	→		MEASUREMENT REPORT	UE reports UTRA RSSI for the UARFCN of cell 4 periodically.
4	←		MEASUREMENT CONTROL	SS assigns inter-frequency measurements for "GSM carrier RSSI". This measurement task is associated with transmission gap pattern sequence with TGPSI=2. The IE "TGPS status flag" is set to "Inactive".
5	←		PHYSICAL CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activates it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	IE "Failure cause" shall be set to "Compressed mode runtime error"
8	→		MEASUREMENT REPORT	The contents shall be the same as that in step 3.

Specific Message Contents

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical Reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency info list	
- Inter-frequency cell id	4
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 4
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 4
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cells for measurement	
- Inter-frequency cell id	4
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- Measurement quantity for frequency quality estimate	CPICH Ec/No
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- 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 cell status	
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	Not present
- Inter-frequency set update	Not present
- CHOICE report criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256

MEASUREMENT REPORT (Step 3 and Step 8)

Information Element	Value/Remarks
Measurement identity	Check to see if set to "1"
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-frequency measured results list"
- Inter-frequency measurement results	
- Frequency info	
- UARFCN (uplink)	Check to see if set to the UARFCN of the uplink frequency for cell 4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell 4
- UTRA carrier RSSI	Check to see if it is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN observed time difference	Check to see if it is absent
- Cell synchronisation information	Check to see if it is absent
- Primary CPICH Info	
- Primary Scrambling Code	Check to see if set to the same code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is absent
- Pathloss	Check to see if it is absent
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOISE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	7
CHOISE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOISE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
CHOISE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOISE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOISE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	2
- TGPS status flag	inactive
- TGCFN	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 5)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "Packet to CELL_DCH from CELL_DCH in PS" or "Non-speech in CS" or "Speech in CS" found in Annex A with the following exceptions:

Information Element	Value/remark
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	4
- TGL1	7
- TGL2	5
- TGD	0
- TGPL1	3
- TGPL2	5
- RPP	Mode 0
- ITP	Mode 0
- CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	B
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Failure cause	Checked to see if set to "compressed mode runtime error"
- Protocol error information	Checked to see if it is absent
- Deleted TGPSI	Checked to see if it is set to "2"

8.4.1.13.5 Test requirement

After step 6 the UE shall keep transmission gap pattern sequence configuration associated with TGPSI=1. It shall delete the transmission gap pattern sequence configuration associated with TGPSI=2, and delete the inter-RAT measurements corresponding to it. It shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the uplink DCCH, with the IE "Failure cause" set to "Compressed mode runtime error".

After step 7 the UE shall continue to send MEASUREMENT REPORT messages periodically, to report the UTRA RSSI value for the UARFCN in which cell 4 resides. The MEASUREMENT REPORT messages sent by the UE shall not contain the CPICH RSCP readings for cell 4.

8.4.1.14 Measurement Control and Report: Cell forbidden to affect reporting range

8.4.1.14.1 Definition

8.4.1.14.2 Conformance requirement

When event 1A is ordered by the UTRAN in a MEASUREMENT CONTROL message, the UE shall send a MEASUREMENT REPORT message when a primary CPICH measured has entered the specified reporting range. The UTRAN can request that a certain primary CPICH be forbidden to affect the reporting range used for event 1A measurement reporting. However, the UE shall ignore such a request from the UTRAN if two conditions are fulfilled – (a) the primary CPICH concerned is included in the active set, and (b) all cells in the active set are defined as primary CPICHs forbidden to affect the reporting range.

Reference

3GPP TS 25.331 clause 14.1.2.1, clause 14.1.5.4

8.4.1.14.3 Test Purpose

To confirm that the UE reports the triggering of event 1A to the SS, if a primary CPICH currently measured by the UE enters the reporting range. To confirm that the UE ignores that a primary CPICH is forbidden to affect the reporting range when (a) the primary CPICH concerned is included in active set and (b) all cells in the active set are defined as primary CPICHs forbidden to affect the reporting range.

8.4.1.14.4 Method of test

Initial Condition

System Simulator: 3 cells – Cell 1, cell 2 and cell 3 are active.

UE: CS-DCCH+DTCH _DCH (State 6-9) or PS-DCCH+DTCH_DCH (State 6-10) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.4.1.14-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "and "T2" and "T3" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.14-1

Para-meter	Unit	Cell 1				Cell 2				Cell 3			
		T0	T1	T2	T3	T0	T1	T2	T3	T0	T1	T2	T3
UTRA RF Channel Number		Ch. 1				Ch. 1				Ch. 1			
CPICH Ec	dBm /3.84 MHz	-60	-60	-85	-60	-85 75	-70	-60	-85	-70	-70	-85	-70

The UE is initially in CELL_DCH state of cell 1.

SS sends a MEASUREMENT CONTROL message with cell 1, cell 2 and cell 3 listed in IE "intra-frequency cell info list". In this message the IE "CHOICE reporting criteria" is set to "intra-frequency measurement report criteria", with the IE "intra-frequency event identity" set to "1A". The IE "reporting range" is set to 5 12 dB in the MEASUREMENT

CONTROL message. The UE shall send a MEASUREMENT REPORT on the uplink DCCH, which contains the IE "Event results" to report that intra-frequency event 1A is triggered by cell 3.

SS executes the active set update procedure, requesting that cell 3 be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 3 into its current active set. SS configures itself according to the values in columns "T1" shown above. The UE shall transmit a MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event 1A. In these messages, the IE "Events results" shall indicate that intra-frequency event 1A is triggered by cell 2. Upon reception of MEASUREMENT REPORT message, SS sends ACTIVE SET UPDATE message to request cell 2 to be added to the active set. The UE shall respond with ACTIVE SET UPDATE COMPLETE message on the uplink DCCH and then include cell 2 into its current active set.

SS sends a MEASUREMENT CONTROL message to command that all cells in the active set are forbidden to update the reporting range for event 1A. SS configures itself according to the values in columns "T2" shown above. The UE shall not transmit a MEASUREMENT REPORT message on the uplink to report the triggering of intra-frequency reporting event 1A. SS reconfigures itself according to the values in column "~~T3~~T0" shown in table 8.4.1.14-1 above. The UE shall transmit MEASUREMENT REPORT message to report triggering intra-frequency event identity 1A, and also to report the CPICH RSCP readings for cell 1, cell 2 and cell 3 in IE "Measured results".

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				UE is initially in CELL_DCH state in cell 1.
2			Void	
3			Void	
4			Void	
5		←	MEASUREMENT CONTROL	Cell 1, cell 2 and cell 3 are listed in IE "Intra-frequency cell info list". The IE "CHOICE reporting criteria" is set to "Intra-frequency measurement reporting criteria" and IE "Intra-frequency event identity" is set to "1A", with IE "reporting range" set to 5 12 dB.
6	→		MEASUREMENT REPORT	UE shall report that cell 3 has entered the reporting range for intra-frequency reporting event 1A.
7		←	ACTIVE SET UPDATE	UE shall add cell 3 into the active set
8	→		ACTIVE SET UPDATE COMPLETE	
9				SS configures itself according to the settings stated in column "T1" of table 8.4.1.14-1.
10	→		MEASUREMENT REPORT	UE shall report that cell 2 has entered the reporting range for intra-frequency reporting event 1A.
10a		←	ACTIVE SET UPDATE	UE shall add cell 2 into the active set
10b	→		ACTIVE SET UPDATE COMPLETE	
11		←	MEASUREMENT CONTROL	SS forbids all cells in active list to affect the reporting range
12				SS configures itself according to the settings stated in column "T2" of table 8.4.1.14-1.
13				SS verifies that no MEASUREMENT REPORT messages are received in the uplink direction
14				SS configures itself according to the settings stated in column "T3" of table 8.4.1.14-1.
15	→		MEASUREMENT REPORT	UE shall report that cell 3 has entered the reporting range for intra-frequency reporting event 1A.

Specific Message Contents

MEASUREMENT CONTROL (Step 5)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/Remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency
- New intra-frequency info list	
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	3
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell for measurement	
- Intra-frequency cell id	1, 2 and 3
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- 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	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present

Information Element	Value/Remark
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1a
- Triggering conditions 1	Not Present
- Triggering conditions 2	Active set cells and monitored set cells
- Reporting range	~~16~~12.0 dB
- Cells forbidden to affect reporting range	Not Present
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	1
- Reporting interval	0
- Reporting cell status	
- CHOICE reported cells	Report cells within monitored set on used frequency
- Maximum number of reported cells	e3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- 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
- 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 Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

ACTIVE SET UPDATE (Step 7)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 3
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	0 chips
- 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	512
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

ACTIVE SET UPDATE COMPLETE (Step 8 and Step 10b)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- 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 Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 2

ACTIVE SET UPDATE (Step 10a)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	0 chips
- 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	512
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

MEASUREMENT CONTROL (Step 11)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/Remark
RRC transaction identifier	1
Measurement Identity	1
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	Not Present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	*Only 1 event is specified*
- Intra-frequency event identity	1a
- Triggering conditions 1	Not Present
- Triggering conditions 2	Active set cells
- Reporting range	~~16.0~~12 dB
- Cells forbidden to affect reporting range	
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 1
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 2
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the same code as in cell 3
- W	0
- Hysteresis	0 dB
- Threshold used frequency	Not Present
- Reporting deactivation threshold	3
- Replacement activation threshold	Not Present
- Time to trigger	0 msec
- Amount of reporting	1
- Reporting interval	0
- Reporting cell status	
- CHOICE reported cells	Report cells within active set
- Maximum number of reported cells	e3
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 15)

Information Element	Value/Remarks
RRC transaction identifier	Check to see if set to 1
Measurement identity	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measurement results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
- 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 3
- CPICH Ec/No	Check to see if this IE is absent
- CPICH RSCP	Check to see if this IE is present
- Pathloss	Check to see if this IE is absent
- Cell 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 Results	Check to see if this IE is absent
Event Results	Check to see if set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if set to '1a'
- Cell measurement event results	
- CHOICE Mode	Check to see if set to 'FDD'
- Primary CPICH info	
- Primary Scrambling Code	Check to see if set to the same code for cell 3

8.4.1.14.5 Test requirement

After step 5, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain the IE "Event results" to report that cell 3 has triggered intra-frequency event 1A.

After step 9, the UE shall transmit MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report tha cell 2 has triggered intra-frequency event 1A.

After step 12, the UE shall not send MEASUREMENT REPORT message on the uplink DCCH to report the triggering of intra-frequency event identity 1A.

After step 14, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain IE "Event results" to report that cell 3 has triggered intra-frequency event 1A.

8.4.1.15 Measurement Control and Report: Configuration Incomplete

8.4.1.15.1 Definition

8.4.1.15.2 Conformance requirement

When the UE received a MEASUREMENT CONTROL message which results in an "configuration incomplete" condition to be detected, the UE shall retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received. It shall also send MEASUREMENT CONTROL FAILURE, with the IE "RRC transaction identifier" set to the value of the same IE in the received MEASUREMENT CONTROL message, and also the "failure cause" IE set to "incomplete configuration".

Reference

3GPP TS 25.331 clause 8.4.1.4a, 8.6.7.10, 8.6.7.13, 8.6.7.14, 8.6.7.16, 8.6.7.17, 8.6.7.18

8.4.1.15.3 Test Purpose

To confirm that the UE sends a MEASUREMENT CONTROL FAILURE message, after receiving a MEASUREMENT CONTROL message with IE "Measurement command" set to "Setup" and the following contents:

- "CHOICE measurement type" IE is set to "Intra-frequency measurement" and "Intra-frequency measurement quantity" is omitted; or

- "CHOICE measurement type" IE is set to "Inter-frequency measurement" and "Inter-frequency reporting quantity" is omitted; or

- "Reporting mode" IE is omitted. or

- "CHOICE measurement type" IE is set to "Quality measurement" and IE "Quality reporting quantity" is omitted or

- "CHOICE measurement type" IE is set to "UE internal measurement" and IE "UE internal measurement quantity" is omitted or

- "CHOICE measurement type" IE is set to "UE internal measurement" and IE "UE internal reporting quantity" is omitted or

- "CHOICE measurement type" IE is set to "Traffic volume measurement" and IE "Traffic volume measurement quantity" is omitted or

- "CHOICE measurement type" IE is set to "Traffic volume measurement" and IE "Traffic volume reporting quantity" is omitted

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

8.4.1.15.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CS-DCCH_DCH (State 6-5) or PS-DCCH_DCH (State 6-7) in cell 1 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 brought to CELL_DCH. SS transmits a MEASUREMENT CONTROL message to the UE, commanding it to start an intra-frequency measurement and reporting task. However, IE "Intra-frequency measurement quantity" is absent in the message. The UE shall not establish the intra-frequency measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends the MEASUREMENT CONTROL message once more. In this message, SS commands the establishment of an inter-frequency measurement and reporting task, but IE "Inter-frequency reporting quantity" is omitted in this message. The UE shall not establish the intra-frequency measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends a third MEASUREMENT CONTROL message. In this message, SS commands the establishment of an intra-frequency measurement and reporting task, but IE "Measurement reporting mode" is omitted in this message. The UE shall not establish the intra-frequency measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends a fourth MEASUREMENT CONTROL message. In this message, SS commands the establishment of a quality measurement and reporting task, but IE "Quality reporting quantity" is omitted in this message. The UE shall not establish the quality measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends a fifth MEASUREMENT CONTROL message. In this message, SS commands the establishment of UE internal measurement and reporting task, but IE "UE internal measurement quantity" is omitted in this message. The UE shall not establish the UE internal measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends a sixth MEASUREMENT CONTROL message. In this message, SS commands the establishment of UE internal measurement and reporting task, but IE "UE internal reporting quantity" is omitted in this message. The UE shall not establish the UE internal measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Next, SS sends a seventh MEASUREMENT CONTROL message. In this message, SS commands the establishment of a traffic volume measurement and reporting task, but IE "Traffic volume measurement quantity" is omitted in this message. The UE shall not establish the traffic volume measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

In the final sequence, SS sends an eight MEASUREMENT CONTROL message. In this message, SS commands the establishment of a traffic volume measurement and reporting task, but IE "Traffic volume reporting quantity" is omitted in this message. The UE shall not establish the traffic volume measurement. It shall send a MEASUREMENT CONTROL FAILURE message to report that a "configuration incomplete" error has been detected.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is CELL_DCH state in cell 1.
2	←		MEASUREMENT CONTROL	SS commands the start of an intra-frequency measurement and reporting task. IE "Intra-frequency measurement quantity" is absent.
3	→		MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
4	←		MEASURMENT CONTROL	SS commands the start of an inter-frequency measurement and reporting task. IE "Inter-frequency reporting quantity" is absent.
5	→		MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
6	←		MEASURMENT CONTROL	SS commands the start of an inter-frequency measurement and reporting task. IE "Measurement reporting mode" is absent.
7	→		MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"

8	←	MEASUREMENT CONTROL	SS commands the start of a Quality measurement and reporting task. IE "Quality reporting quantity" is absent.
9	→	MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
10	←	MEASUREMENT CONTROL	SS commands the start of an UE internal measurement and reporting task. IE "UE internal measurement quantity" is absent.
11	→	MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
12	←	MEASUREMENT CONTROL	SS commands the start of an UE internal measurement and reporting task. IE "UE internal reporting quantity" is absent.
13	→	MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
14	←	MEASUREMENT CONTROL	SS commands the start of a Traffic volume measurement and reporting task. IE "Traffic volume measurement quantity" is absent.
15	→	MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"
16	←	MEASUREMENT CONTROL	SS commands the start of a Traffic volume measurement and reporting task. IE "Traffic volume reporting quantity" is absent.
17	→	MEASUREMENT CONTROL FAILURE	UE reports the occurrence of "incomplete configuration"

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	1
RRC transaction Identifier	Arbitrarily selected between 0 and 3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cell	Not Present
- Cell for measurement	
- Intra-frequency cell id	Set to id of cell 1
- Intra-frequency measurement quantity	Not Present
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- SFN-SFN onserved time difference reporting indicator	No report
- Cell synchronization information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- SFN-SFN onserved time difference reporting indicator	No report
- Cell synchronization information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active set
- Maximum number of reported cells	1
- Measurement validity	CELL_DCH
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	32 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL FAILURE (Step 3)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 2
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 4) (Note 1)

Information Element	Value/Remark
Measurement Identity	2
RRC transaction Identifier	Arbitrarily selected between 0 and 3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting/Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cell	
- Inter-frequency cell id	Set to id of cell 4
- Frequency info	
- CHOICE Mode	FDD
- UARFCN uplink (Nu)	Set to the same UARFCN as cell 4 in clause 6.1 of TS 34.108
- UARFCN downlink (Nu)	Set to the same UARFCN as cell 4 in clause 6.1 of TS 34.108
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	FALSE
- CHOICE mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- TX Diversity Indicator	FALSE
- Cell selection and re-selection info	Not Present
- Cell for measurement	
- Inter-frequency cell id	Set to id of cell 4
- Inter-frequency measurement quantity	
- CHOICE rerporting criteria	Inter-frequency reporting criteria
- Filter coefficients	0
- CHOICE mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	Not Present
- Reporting cell status	
- CHOICE reported cell	Report cells within monitored set on non-used frequency
- Maximum number of reported cells	1
- Measurement validity	CELL_DCH
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	32 seconds
- Inter-frequency set update	Not Present
DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL FAILURE (Step 5)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 4
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 6)

Information Element	Value/Remark
Measurement Identity	3
RRC transaction Identifier	Arbitrarily selected between 0 and 3
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- CHOICE intra-frequency cell removal	Remove no intra-frequency cells
- New intra-frequency cell	Not Present
- Cell for measurement	
- Intra-frequency cell id	Set to id of cell 1
- Intra-frequency measurement quantity	
- Filter coefficient	0
- CHOICE mode	FDD
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	
- SFN-SFN onserved time difference reporting indicator	No report
- Cell synchronization information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- SFN-SFN onserved time difference reporting indicator	No report
- Cell synchronization information reporting indicator	No report
- Cell identity reporting indicator	FALSE
- CHOICE mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	
- CHOICE reported cell	Report cells within active set
- Maximum number of reported cells	1
- Measurement validity	CELL_DCH
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	32 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT CONTROL FAILURE (Step 7)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 6
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement identity	16
Measurement command	Setup
- CHOICE measurement type	Quality measurement
- Quality reporting quantity	Not present
- Reporting criteria	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	64 sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL FAILURE (Step 9)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 8
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 10)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	Not present
- UE internal reporting quantity	
- UE Transmitted Power	TRUE
- CHOICE mode	FDD
- UE Rx-Tx time difference	FALSE
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	1000 msec
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL FAILURE (Step 11)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 10
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 12)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- CHOICE mode	FDD
- Measurement quantity	UE Transmitted Power
- Filter Coefficient	0
- UE internal reporting quantity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	1000 msec
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL FAILURE (Step 13)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 12
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 14)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Not present
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL FAILURE (Step 15)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 14
Failure cause	Check to see if set to "incomplete configuration"

MEASUREMENT CONTROL (Step 16)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	Not present
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL FAILURE (Step 17)

Information Element	Value/Remark
RRC transaction identifier	Check if it is set to the same value of the same IE in the MEASUREMENT CONTROL message sent in Step 16
Failure cause	Check to see if set to "incomplete configuration"

NOTE: For the MEASUREMENT CONTROL message in step 4, cell 4 is signalled to be added as a new cell into the UE's inter-frequency cell list. However, SS does not need to transmit cell 4 in the downlink, as the UE is not expected to perform measurement and reporting for this cell.

8.4.1.15.5 Test Requirement

After step 2, 4, 6, 8, 10, 12, 14 and step 16, the UE shall transmit MEASUREMENT CONTROL FAILURE message, stating the IE "failure cause" as "incomplete configuration". The UE shall not transmit any MEASUREMENT REPORT messages during the execution of this test case.

8.4.1.16 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL_FACH state

8.4.1.16.1 Definition

8.4.1.16.2 Conformance requirement

Upon transition from idle mode to CELL_FACH state, the UE shall store the measurement control information from the IE "Traffic volume measurements system information" received in System Information Block type 11 or System Information Block type 12. UE shall begin traffic volume measurement reporting according to the assigned information.

Reference

3GPP TS 25.331 clause 8.4.1.9.4

8.4.1.16.3 Test Purpose

To confirm that after a state transition from idle mode to CELL_FACH state, the UE shall begin a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH. To confirm that in CELL_FACH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied. During CELL_FACH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

8.4.1.16.4 Method of test

Initial Condition

System Simulator: 1cell

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "RLC Buffer Payload", report criteria = "periodic reporting criteria", reporting interval = "6 seconds", reporting amount = 'infinity'. The System Information type 12 message is not broadcasted.

SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. The UE shall transmit a RRC CONNECTION REQUEST message on the uplink CCCH, SS replies with RRC CONNECTION SETUP message and allocates PRACH and S-CCPCH physical channels for uplink and downlink usage. UE shall then enter CELL_FACH state.

UE shall begin traffic volume measurements, and shall send MEASUREMENT REPORT message after completing first measurement. UE shall send second MEASUREMENT REPORT message 6 seconds after first MEASUREMENT REPORT message.

SS sends MEASUREMENT CONTROL message to the UE. This message overwrites measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Event triggered, event 4B: Transport Channel Traffic Volume becomes smaller than an absolute threshold ", Time to trigger = "5 seconds", pending time after trigger = "16 seconds", "reporting threshold = '4K'. Since there is no uplink traffic, UE shall send MEASUREMENT REPORT message after 5 seconds (time to trigger interval).

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2				SS prompts the test operator to make an outgoing call.
3	→		RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	SS allocates common physical channels to UE.
5	→		RRC CONNECTION COMPLETE	UE shall enter CELL_FACH state, and transmit this message to acknowledge the RRC CONNECTION SETUP message.
6	→		MEASUREMENT REPORT	
7	→		MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 6 Seconds.

8	←	MEASUREMENT CONTROL	Traffic volume measurement reporting is requested if measurement is below threshold.
9			SS monitors the uplink DCCH to confirm that no MEASUREMENT REPORT messages are received in 5 seconds.
10	→	MEASUREMENT REPORT	Measurement report because event 4b is triggered

Specific Message Content

System Information Block type 11 (Step 1)

Information Element	Value/Remarks
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	4
- Traffic volume measurement object list	Rach
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All States except CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	6 seconds
- UE internal measurement system information	Not Present

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/Remarks
Initial UE Identity	Check to see if it is the same as the IMSI in USIM card, TMSI or P-TMSI previously allocated.
Establishment cause	Check to see if set to originating call of the compatible traffic classes supported by the UE
Measured results on RACH	Check to see if IE is absent

RRC CONNECTION SETUP (Step 4)

Use the same message sub-type found in Annex A, which is titled "Transition to CELL_FACH".

MEASUREMENT REPORT (Step 6,7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 4
Measured Results	
- CHOICE measurement	Check to see if set to "traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	0
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Traffic Volume Reporting Criteria
- UL transport channel id	Rach Null
- Event specific parameters	
- Event id	4B
- Reporting threshold	4K
- Time to trigger	5000 ms
- Pending time after trigger	16000 ms
- Tx interruption after trigger	Not Present
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Event trigger
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
Measurement identity	4
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is present~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer payload variance~~	~~Check to see if this IE is absent~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Traffic Volume Event Results
- UL transport channel causing event	Rach Null
- Traffic volume event identity	4B

8.4.1.16.5 Test Requirement

After step 5 the UE shall send MEASUREMENT REPORT messages on the uplink DCCH containg RLC buffer payload information for all SRBs. After 6 seconds UE shall send second MEASUREMENT REPORT messages containg RLC buffer payload information for all SRBs.

After step 8 the UE shall overwrite measurement information received from system information type 11 with measurement information in MEASUREMENT CONTROL message. The UE shall not send MEASUREMENT REPORT message within time to trigger interval. After step 9 the UE shall transmit MEASUREMENT REPORT messages with event identity 4B.

8.4.1.17 Measurement Control and Report: Traffic volume measurement for transition from idle mode to CELL_DCH state

8.4.1.17.1 Definition

8.4.1.17.2 Conformance requirement

Upon transition from idle mode to CELL_DCH state, the UE shall begin a traffic volume type measurement, assigned in System Information Block type 11 or System Information Block type 12.

Reference

3GPP TS 25.331 clause 8.4.1.8.4

8.4.1.17.3 Test Purpose

To confirm that after a state transition from idle mode to CELL_DCH state, the UE begin a traffic volume type measurement, as specified in System Information Block type 11 or 12 messages on BCCH. When entering CELL_DCH state, the UE shall send a MEASUREMENT REPORT message when reporting criteria is satisfied. During CELL_DCH state, if the UE receives a MEASUREMENT CONTROL message, it shall perform the measurement and reporting tasks based on the MEASUREMENT CONTROL message received.

8.4.1.17.4 Method of test

Initial Condition

System Simulator: 1cell

UE: "Registered idle mode on CS" (state 2) or "Registered idle mode on PS" (state 3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE. If the UE supports both CS and PS domains, the initial UE state shall be "Registered idle mode on CS/PS" (state 7).

Test Procedure

The UE is initially in idle mode. The System Information Block type 11 message is modified with respect to the default settings to request UE to perform traffic volume measurements. Key measurement parameters are as follows: measurement quantity = "Average RLC Buffer Payload", report criteria = "Event triggered, event 4B", reporting threshold = "8K", report transfer mode = "Unacknowledged mode". The System Information type 12 message is not broadcasted.

SS prompts the operator to make an outgoing call for one of the traffic classes supported by the UE. Dedicated resources are allocated to the UE during RRC connection establishment procedure.

UE shall begin traffic volume measurements after entering in CELL_DCH state. The UE shall send MEASUREMENT REPORT message because uplink traffic is below threshold.

SS sends MEASUREMENT CONTROL message to the UE. This message reconfigures measurement information saved from System information type 11. Key measurement parameters are as follow: measurement type = "traffic volume measurement", measurement quantity = "RLC Buffer Payload", report criteria = "Periodic reporting criteria", reporting interval = "8 seconds", reporting amount = "8". The UE shall periodically send MEASUREMENT REPORT message to report RLC Buffer Payload for each RB.

SS sends MEASUREMENT CONTROL message to release traffic volume measurement. UE shall not send measurement report after receiving this message.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	System Information Block type 11	The UE is idle mode and camped onto cell 1. System Information Block type 11 to be transmitted is different from the default settings (see specific message contents)
2				SS prompts the test operator to make an outgoing call.
3	→		RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	SS allocates dedicated physical channels to UE.
5	→		RRC CONNECTION COMPLETE	UE shall enter CELL_DCH state.

6	→	MEASUREMENT REPORT	Event 4B is triggered. This message should come on RB1.
7	←	MEASUREMENT CONTROL	Periodic Traffic volume measurement reporting is requested.
8	→	MEASUREMENT REPORT	This message should come on RB2.
9	→	MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 8 Seconds.
10	←	MEASUREMENT CONTROL	Release traffic volume measurement.
11			Wait for 8 Seconds to confirm that UE does not send measurement report message.

Specific Message Content

System Information Block type 11 (Step 1)

Information Element	Value/Remarks
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	2
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	Average RLC Buffer Payload
- Time Interval to take an average	200 msec
- Traffic volume reporting quantity	
- RB buffer payload	False
- RB buffer payload average	True
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	CELL_DCH
- Measurement reporting mode	
- Measurement report transfer mode	Unacknowledged Mode
- Periodical or event trigger	Event Trigger
- Report criteria system Information	Traffic Volume Reporting Criteria
- UL transport channel id	Not Present
- Event specific parameters	
- Event id	4B
- Reporting threshold	8K
- Time to trigger	Not Present
- Pending time after trigger	Not Present
- Tx interruption after trigger	Not Present
- UE internal measurement system information	Not Present

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/Remarks
Initial UE Identity	Check to see if it is the same as the IMSI in USIM card, TMSI or P-TMSI previously allocated.
Establishment cause	Check to see if set to originating call of the compatible traffic classes supported by the UE
Measured results on RACH	Check to see if IE is absent

RRC CONNECTION SETUP (Step 4)

Use the same message sub-type found in Annex A, which is titled "Transition to CELL_DCH".

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 2
Measured Results	
- CHOICE measurement	Check to see if set to "traffic volume measured results list"
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is absent~~
~~- RLC buffer payload average~~	~~Check to see if this IE is present~~
~~- RLC buffer payload variance~~	~~Check to see if this IE is absent~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is present
- RLC buffer payload variance	Check to see if this IE is absent
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	
- UL transport channel causing event	DCH 5
- Traffic volume event identity	4B

MEASUREMENT CONTROL (Step 7)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	~~Reconfigure~~Modify
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
-CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB~~RB buffer payload~~	True
- Average of RLC Buffer Payload for each RB~~RB buffer payload average~~	False False
- Variance of RLC Buffer Payload for each RB~~RB buffer payload variance~~	Not Present Periodical Reporting Criteria
- Measurement validity	8
- CHOICE Report~~ing~~ criteria	8 Sec
- Amount of reporting~~Reporting amount~~	~~Acknowledged mode~~
- Reporting interval	~~Periodic~~
~~Measurement reporting mode~~	~~Not Present~~
~~- Transfer Mode~~	Not Present
~~- Periodical or event trigger~~	
~~Additional measurement list~~	
DPCH compressed mode status	

MEASUREMENT REPORT (Step 8,9)

Information Element	Value/Remarks
Measurement identity	2
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is present~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer payload variance~~	~~Check to see if this IE is absent~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 10)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

8.4.1.17.5 Test Requirement

After step 5, due to triggering of event 4B, the UE shall send MEASUREMENT REPORT message using unacknowledged mode of RLC. After step 7, UE shall send MEASUREMENT REPORT message using Acknowledged mode of RLC. After 8 seconds UE shall send second MEASUREMENT REPORT message. After step 10, the UE shall not send MEASUREMENT REPORT message.

8.4.1.18 Measurement Control and Report: Traffic volume measurement for transition from CELL_FACH state to CELL_DCH state

8.4.1.18.1 Definition

8.4.1.18.2 Conformance requirement

Upon transition from CELL_FACH to CELL_DCH state, the UE shall:

- retrieve each set of measurement control information of measurement type "traffic volume" stored;

    - if the optional IE "measurement validity" for this measurement has not been included:

        - delete the measurement;

    - if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states except CELL_DCH":

        - stop measurement reporting; and

        - save the measurement to be used after the next transition to CELL_FACH state;

    - if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":

        - continue measurement reporting;

    - if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "CELL_DCH":

        - resume this measurement and associated reporting;

- if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message when transiting to CELL_DCH state:

    - continue an ongoing traffic volume type measurement, assigned in System Information Block type 11 or System Information Block type 12.

Reference

3GPP TS 25.331 clause 8.4.1.7.4

8.4.1.18.3 Test Purpose

To confirm that the UE performs traffic volume measurements and the associated reporting when it enters CELL_DCH state from CELL_FACH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL_DCH state have been previously stored.

To confirm that the UE shall continue to perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions stated in System Information Block type 11 or 12 messages have been satisfied.

8.4.1.18.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

Initially the UE is in CELL_FACH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL_FACH state to CELL_DCH state. While entering CELL_DCH state from CELL_FACH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL_DCH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL_FACH state from CELL_DCH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

Similarly behavior of the UE when moved from CELL_FACH state to CELL_DCH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL_DCH state" or "CELL_DCH state" or "All states" is tested.

When the UE is in CELL_FACH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. The UE is taken to CELL_DCH state from CELL_FACH state using RADIO BEARER RECONFIGURATION procedure. In CELL_DCH state the UE shall continue traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2	→		MEASUREMENT REPORT	
3		←	RADIO BEARER RECONFIGURATION	
4	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6		←	RADIO BEARER RECONFIGURATION	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.

8			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
9	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10	→	MEASUREMENT REPORT	.
11	←	RADIO BEARER RECONFIGURATION	
12	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
14	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21	→	MEASUREMENT REPORT	
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.

25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_FACH state.
33	←	SIB11 modified	Traffic volume measurements and reporting is assigned to Ues
34	→	MEASUREMENT REPORT	
35	←	RADIO BEARER RECONFIGURATION	
36	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_DCH state from CELL_FACH state UE shall continue traffic volume measurement assigned in System Information (Step 33).
37	→	MEASUREMENT REPORT	
38	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is present~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer variance~~	~~Check to see if this IE is absent~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 35)

Use the same message type found in Annex A with condition set to A4.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in Annex A with condition set to A5.

MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

MEASUREMENT REPORT (Step 10)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

MEASUREMENT CONTROL (Step 14)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

MEASUREMENT REPORT (Step 21)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

System Information Block type 11 (Step 33)

Information Element	Value/Remarks
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds
- UE internal measurement system information	Not Present

MEASUREMENT REPORT (Step 34, and 37)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 38)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.18.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 21, 29 and 37. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 13.

8.4.1.19 Measurement Control and Report: Traffic volume measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.19.1 Definition

8.4.1.19.2 Conformance requirement

Upon transition from CELL_DCH to CELL_FACH state, the UE shall:

- retrieve each set of measurement control information of measurement type "traffic volume" stored in the UE; and

  - if the optional IE "measurement validity" for this measurement has not been included:

    - delete the associated measurement;

  - if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":

    - stop measurement reporting;

    - save the associated measurement to be used after the next transition to CELL_DCH state;

  - if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":

    - continue measurement reporting;

  - if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":

    - resume this measurement and associated reporting;

- if no traffic volume type measurements applicable to CELL_FACH states are stored in the UE:

    - store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 or System Information Block type 11;

    - begin traffic volume measurement reporting according to the assigned information.

Reference

3GPP TS 25.331 clauses 8.4.1.6.6.

8.4.1.19.3 Test Purpose

The UE shall performs traffic volume measurements and the associated reporting when it enters CELL_FACH state from CELL_DCH state, and that such measurement contexts (and optionally, the reporting context) valid for CELL_FACH state have been previously stored.

The UE shall perform traffic volume measurement listed in the System Information Block type 11 or 12 messages, if no previously assigned measurements are present. The UE shall transmit MEASUREMENT REPORT messages if reporting conditions has been satisfied.

Reference

3GPP TS 25.331 clause 8.4.1.6.6

8.4.1.19.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

Initially the UE is in CELL_DCH state. MEASUREMENT CONTROL message is sent to the UE to establish traffic volume measurement context with optional IE "measurement validity" is not present. The UE shall perform measurement and reporting as assigned in MEASUREMENT CONTROL message. RADIO BEARER RECONFIGURATION procedure is used to take the UE from CELL_DCH state to CELL_FACH state. While entering CELL_FACH state from CELL_DCH state, the UE shall delete traffic volume measurement contexts if optional IE "measurement validity" is not present. So, in CELL_FACH state UE shall not perform traffic volume measurement and reporting. UE is taken to the CELL_DCH state from CELL_FACH state using RADIO BEARER RECONFIGURATION procedure. The UE shall not send MEASUREMENT REPORT message as measurement context is already deleted.

Similarly behavior of the UE when moved from CELL_DCH state to CELL_FACH state and assigned traffic volume measurement context is present with IE "measurement validity" is set to "All But CELL_DCH state" or "CELL_DCH state" or "All states" is tested.

When the UE is in CELL_DCH state, System Information is modified to assign traffic volume measurement and reporting to the UE. No previously assigned traffic volume measurement contexts are present in the UE. The UE is taken to CELL_FACH state from CELL_DCH state using RADIO BEARER RECONFIGURATION procedure. In CELL_FACH state the UE shall perform traffic volume measurement and reporting as assigned in System Information. Traffic volume measurement and reporting is released by sending MEASUREMENT CONTROL message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	Optional IE "measurement validity" is not included.
2	→		MEASUREMENT REPORT	
3		←	RADIO BEARER RECONFIGURATION	
4	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall delete measurement context setup by MEASUREMENT CONTROL message (Step 1).
5				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
6		←	RADIO BEARER RECONFIGURATION	
7	→		RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
8				SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.

9	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All But CELL_DCH".
10			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
11	←	RADIO BEARER RECONFIGURATION	
12	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement setup by MEASUREMENT CONTROL message (Step 9).
13	→	MEASUREMENT REPORT	
14	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 9).
15	←	RADIO BEARER RECONFIGURATION	
16	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
17	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "CELL_DCH".
18	→	MEASUREMENT REPORT	
19	←	RADIO BEARER RECONFIGURATION	
20	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall stop traffic volume measurement setup by MEASUREMENT CONTROL message (Step 17).
21			SS waits for 8 seconds to confirm that there is no MEASUREMENT REPORT message from UE.
22	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 17)
23	←	RADIO BEARER RECONFIGURATION	
24	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.

25	←	MEASUREMENT CONTROL	IE "measurement validity" is set to "All states".
26	→	MEASUREMENT REPORT	
27	←	RADIO BEARER RECONFIGURATION	
28	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall continue traffic volume measurement setup by MEASUREMENT CONTROL message (Step 25).
29	→	MEASUREMENT REPORT	
30	←	MEASUREMENT CONTROL	UE shall release measurement context setup by MEASUREMENT CONTROL message (Step 25)
31	←	RADIO BEARER RECONFIGURATION	
32	→	RADIO BEARER RECONFIGURATION COMPLETE	UE is in CELL_DCH state.
33	←	SIB12 modified	Traffic volume measurements and reporting is assigned to UEs
34	←	RADIO BEARER RECONFIGURATION	
35	→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_FACH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 33).
36	→	MEASUREMENT REPORT	
37	←	MEASUREMENT CONTROL	UE shall release measurement context assigned in System Information (Step 33).

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Measurement validity	Not Present
- Report criteria	Periodical Reporting Criteria
- Reporting amount	8
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2)

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is present~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer variance~~	~~Check to see if this IE is absent~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	20
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

RADIO BEARER RECONFIGURATION (Step 3, 11, 19, 27, and 34)

Use the same message type found in Annex A with condition set to A5.

RADIO BEARER RECONFIGURATION (Step 6, 15, 23, and 31)

Use the same message type found in Annex A with condition set to A4.

MEASUREMENT CONTROL (Step 9)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	All But CELL_DCH

MEASUREMENT REPORT (Step 13)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	2

MEASUREMENT CONTROL (Step 14)

Information Element	Value/Remark
Measurement Identity	2
Measurement Command	Release
Measurement reporting mode	Not Present
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT CONTROL (Step 17)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Measurement validity	CELL_DCH

MEASUREMENT REPORT (Step 18)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	3

MEASUREMENT CONTROL (Step 22)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	3

MEASUREMENT CONTROL (Step 25)

The contents of this message are identical to MEASUREMENT CONTROL (Step 1) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH :1
- UL transport channel identity	DCH : 5
- Measurement validity	All States

MEASUREMENT REPORT (Step 26, and 29)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	4

MEASUREMENT CONTROL (Step 30)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	4

System Information Block type 12 (Step 33)

Information Element	Value/Remarks
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	5
- Traffic volume measurement object list	Not Present
- Traffic volume measurement quantity	RLC Buffer Payload
- Traffic volume reporting quantity	
- RB buffer payload	True
- RB buffer payload average	False
- RB buffer payload variance	False
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	Not Present
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds
- UE internal measurement system information	Not Present

MEASUREMENT REPORT (Step 36)

The contents of this message are identical to MEASUREMENT REPORT (Step 2) message with the following exceptions:

Information Element	Value/Remarks
Measurement identity	5

MEASUREMENT CONTROL (Step 37)

The contents of this message are identical to MEASUREMENT CONTROL (Step 14) message with the following exceptions:

Information Element	Value/Remark
Measurement Identity	5

8.4.1.19.5 Test Requirement

The UE shall send MEASUREMENT REPORT message in steps 13, 29 and 36. The UE shall not send MEASUREMENT REPORT message in steps 5, 8, and 21.

8.4.1.20 Measurement Control and Report: Traffic volume measurement in CELL_PCH state

8.4.1.20.1 Definition

8.4.1.20.2 Conformance requirement

In CELL_PCH state, when the reporting criteria is fulfilled for any traffic volume measurement which is being performed in the UE, the UE shall first perform the cell update procedure with the cause "uplink data transmission", in order to transit to CELL_FACH state and then transmit a MEASUREMENT REPORT message on the uplink DCCH

8.4.1.20.3 Test Purpose

To confirm that in CELL_PCH state, UE performs assigned traffic volume measurement. When reporting criteria for ongoing traffic volume measurement is fulfilled, the UE shall first perform cell update procedure and then transmit MEASUREMENT REPORT message.

Reference

3GPP TS 25.331 clause 8.4.2.2

8.4.1.20.4 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

Initially the UE is in CELL_DCH state. System Information block type 12 message is modified to assign traffic volume measurement and repotting. RADIO BEARER RECONFIGURATION procedure is used to take UE from CELL_DCH state to CELL_PCH state. While entering in CELL_PCH state from CELL_DCH state UE should start traffic volume measurement as assigned in System Information. When reporting criteria for traffic volume measurement is satisfied the UE shall change state to CELL_FACH and perform CELL UPDATE procedure. After successful completion of CELL UPDATE procedure, UE shall transmit MEASUREMENT REPORT message.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SIB12 modified	Traffic volume measurements and reporting is assigned to UEs
2		←	RADIO BEARER RECONFIGURATION	IE "RRC State Indicator" is set to "CELL_PCH"
3	→		RADIO BEARER RECONFIGURATION COMPLETE	While entering in CELL_PCH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 1).
4	→		CELL UPDATE	The UE shall move to CELL FACH state with the message set to "uplink data transmission" in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	
5a	→		UTRAN MOBILITY INFORMATION CONFIRM	
6	→		MEASUREMENT REPORT	

Specific Message Content

System Information Block type 12 (Step 1)

Information Element	Value/Remarks
FACH measurement occasion info	Not Present
Measurement control system information	
- Use of HCS	Not used
- Cell_selection_and_reselection_quality	CPICH RSCP
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	
- Traffic volume measurement ID	1
- Traffic volume measurement object list	
- UL transport channel identity	RACH
- UL transport channel identity	DCH : 5
- Traffic volume measurement quantity	Variance of RLC Buffer Payload
- Time Interval to take an average	200 msec
- Traffic volume reporting quantity	
- RB buffer payload	False
- RB buffer payload average	False
- RB buffer payload variance	True
- Traffic volume measurement reporting criteria	Not Present
- Measurement validity	All States
- Measurement reporting mode	
- Measurement report transfer mode	Acknowledged Mode
- Periodical or event trigger	Periodical
- Report criteria system Information	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	8 seconds
- UE internal measurement system information	Not Present

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message type found in Annex A with condition set to A5 except following exceptions:

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

CELL UPDATE (Step 4)

Use the same message type found in Annex A with condition set to A5 except following exceptions:

Information Element	Value/remark
Cell Update Cause	Check to see if set to "Uplink data transmission"

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 5a)

Only the message type is checked.

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is absent~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer variance~~	~~Check to see if this IE is present~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	2
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	3
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	4
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	20
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

8.4.1.20.5 Test Requirement

The UE shall send CELL UPDATE message with cause "Uplink data transfer" in step 4, UTRAN MOBILITY INFORMATION CONFIRM message in step 5a and MEASUREMENT REPORT message in step 6.

8.4.1.21 Measurement Control and Report: Traffic volume measurement in URA_PCH state

8.4.1.21.1 Definition

8.4.1.21.2 Conformance requirement

In URA_PCH state, when the reporting criteria is fulfilled for any traffic volume measurement which is being performed in the UE, the UE shall first perform the cell update procedure with the cause "uplink data transmission", in order to transit to CELL_FACH state and then transmit a MEASUREMENT REPORT message on the uplink DCCH

8.4.1.21.3 Test Purpose

To confirm that in URA_PCH state, UE performs assigned traffic volume measurement. When reporting criteria for ongoing traffic volume measurement is fulfilled, the UE shall first perform cell update procedure and then transmit MEASUREMENT REPORT message.

Reference

3GPP TS 25.331 clause 8.4.2.2

8.4.1.21.4 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

Initially the UE is in CELL_DCH state. MEASUREMENT CONTROL message is sent to UE to assign traffic volume measurement and reporting to be performed in all states except CELL_DCH. The UE is requested to perform periodic reporting of measurements with IE "Reporting amount" is set to 1. RADIO BEARER RECONFIGURATION procedure is used to take UE from CELL_DCH state to URA_PCH state. While entering in URA_PCH state from CELL_DCH state UE should start traffic volume measurement as assigned by MEASUREMENT CONTROL message. When reporting criteria for traffic volume measurement is satisfied the UE shall change state to CELL_FACH and perform CELL UPDATE procedure. After successful completion of CELL UPDATE procedure, UE shall transmit MEASUREMENT REPORT message. The UE shall not send second MEASUREMENT REPORT message after reporting interval, because IE "Reporting amount" in MEASUREMENT CONTROL message is set to 1.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	IE "Reporting amount" is set to 1.
2		←	RADIO BEARER RECONFIGURATION	IE "RRC State Indicator" is set to "URA_PCH"
3		→	RADIO BEARER RECONFIGURATION COMPLETE	While entering in URA_PCH state from CELL_DCH state UE shall start traffic volume measurement as assigned in System Information (Step 1).
4		→	CELL UPDATE	The UE shall move to CELL FACH state with the message set to "uplink data transmission" in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	
5a	→		UTRAN MOBILITY INFORMATION CONFIRM	
6		→	MEASUREMENT REPORT	
7				SS waits for 8 Sec to confirm that UE does not send second MEASUREMENT REPORT message

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement Identity	15
Measurement Command	Setup
- CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	RACH
- Traffic volume measurement quantity	Variance of RLC Buffer Payload
- Time Interval to take an average	200 msec
- Traffic volume reporting quantity	
- RB buffer payload	False
- RB buffer payload average	False
- RB buffer payload variance	True
- Measurement validity	All but CELL_DCH State
- Report criteria	Periodical Reporting Criteria
- Reporting amount	1
- Reporting interval	8 Sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message type found in Annex A with condition set to A5 except following exceptions:

Information Element	Value/remark
RRC State Indicator	URA_PCH
UTRAN DRX cycle length coefficient	3

CELL UPDATE (Step 4)

Use the same message type found in Annex A with condition set to A5 except following exceptions:

Information Element	Value/remark
Cell Update Cause	Check to see if set to "Uplink data transmission"

CELL UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions.

Information Element	Value/Remarks
New C-RNTI	'1010 1010 1010 1010'

UTRAN MOBILITY INFORMATION CONFIRM (Step 5a)

Only the message type is checked.

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	15
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
~~- RB identity~~	~~0~~
~~- RLC buffer payload~~	~~Check to see if this IE is absent~~
~~- RLC buffer payload average~~	~~Check to see if this IE is absent~~
~~- RLC buffer variance~~	~~Check to see if this IE is present~~
- RB identity	1
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	2
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	3
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	4
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
- RB identity	20
- RLC buffer payload	Check to see if this IE is absent
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is present
Measured results on RACH	Check to see if this IE is absent
Additional measured results	Check to see if this IE is absent
Event results	Check to see if this IE is absent

8.4.1.21.5   Test Requirement

The UE shall send CELL UPDATE message with cause "Uplink data transfer" in step 4, UTRAN MOBILITY INFORMATION CONFIRM message in step 5a and MEASUREMENT REPORT message in step 6. The UE shall not send MEASUREMENT REPORT message in step 7.

8.4.1.22 Measurement Control and Report: Quality measurements

8.4.1.22.1 Definition

8.4.1.22.2 Conformance requirement

In CELL_DCH state, the UE shall send MEASUREMENT REPORT message when reporting criteria is fulfilled for any ongoing quality measurements.

Reference

3GPP TS 25.331 clause 8.4

8.4.1.22.3 Test Purpose

To confirm that the UE performs quality measurement as specified in MEASUREMENT CONTROL message received. In CELL_DCH state, the UE shall send MEASUREMENT REPORT message when the reporting criteria is fulfilled for any ongoing quality measurement.

8.4.1.22.4 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 in CELL_DCH state. MEASUREMENT CONTROL message is sent to UE to assign quality measurement and reporting. As assigned in MEASUREMENT CONTROL message, the UE shall periodically send MEASUREMENT REPORT message reporting BLER of downlink transport channel(s).

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MEASUREMENT CONTROL	The UE is requested to perform "Quality measurements"
2	→		MEASUREMENT REPORT	
3	→		MEASUREMENT REPORT	UE shall send second MEASUREMENT REPORT message after 64 seconds.

Specific Message Content

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement identity	16
Measurement command	Setup
- CHOICE measurement type	Quality measurement
- Quality reporting quantity	
- DL transport channel BLER	True
- Transport channel ID list	Not present
- Mode specific Info	fdd : Null
- Reporting criteria	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	64 sec
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2,3)

Information Element	Value/Remarks
Measurement identity	16
Measured Results	
- CHOICE measurement	Quality measurement
- BLER measurement results list	
- Transport channel identity	10
- DL transport channel BLER	Check to see if this IE is present
- Mode specific info	fdd: Null
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

8.4.1.22.5 Test Requirement

In step 2 and 3, the UE shall send MEASUREMENT REPORT message to report BLER for downlink DCH transport channel.

8.4.1.23 Measurement Control and Report: Intra-frequency measurement for events 1C and 1D

8.4.1.23.1 Definition

8.4.1.23.2 Conformance requirement

1. When event 1C is configured in the UE, the UE shall:

   - if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for a primary CPICH:

     - if the equations have been fulfilled during the time "Time to trigger", and if the primary CPICH that is better is not included in the active set but the other primary CPICH is any of the primary CPICHs included in the active set, and if that primary CPICH is not included in the "cells triggered" in the variable TRIGGERED_1C_EVENTS:

       - include that primary CPICH in the "cells triggered" in the variable TRIGGERED_1C_EVENTS;

- if the value of "Replacement activation threshold" for this event is lower than the current number of cells in the active set or equal to 0:

    - if "Reporting interval" for this event is not equal to 0:

        - start a timer for that primary CPICH with the value of "Reporting interval" for this event;

        - set "sent reports" for that primary CPICH in the variable TRIGGERED_1C_EVENTS;

        - send a measurement report with IEs set as below:

            - in "intra-frequency event results": "Intrafrequency event identity" to "1c" and the first entry in "cell measurement event results" to the CPICH info of the primary CPICH not in the active set that triggered the report; and

            - the second entry in "cell measurement event results" to the CPICH info of the primary CPICH in the active set that now is worse than the new primary CPICH and has the best measured value (lowest measured result for pathloss and highest measured result for other measurements); and

            - the rest of the entries to other primary CPICHs that are now worse than this new primary CPICH in the order of their measured value;

            - "measured results" and possible "additional measured results" according to TS 25.331 clause 8.4.2;

2. When event 1D is configured in the UE, the UE shall:

    - if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST_CELL_1D_EVENT, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST_CELL_1D_EVENT:

        - if the equations have been fulfilled during the time "Time to trigger":

            - set "best cell" in the variable BEST_CELL_1D_EVENT to that primary CPICH that triggered the event;

            - send a measurement report with IEs set as below:

                - in "intra-frequency event results"; "Intrafrequency event identity" to "1d" and "cell measurement event results" to the CPICH info of the primary CPICH that triggered the report.

                - "measured results" and possible "additional measured results" according to TS 25.331 clause 8.4.2;

Reference

3GPP TS 25.331 clause 14.1.2.3, 14.1.2.4.

8.4.1.23.3 Test Purpose

1.A To confirm that the UE sends MEASUREMENT REPORT message if event 1C is configured, and number of cells in active set is greater than or equal to 'Replacement activation threshold' parameter, and if monitored or detected primary CPICH on same frequency becomes better than a primary CPICH in active set.

1.B To confirm that the UE does not send MEASUREMENT REPORT message indicating event 1C if number of cells in active set is less than 'Replacement activation threshold' parameter, and if monitored or detected primary CPICH on same frequency becomes better than a primary CPICH in active set.

1.C To confirm that the UE stops periodic reporting of event 1C if the cell that triggered event 1C is added into active set.

2. To confirm that the UE sends MEASUREMENT REPORT message if event 1D is configured and intra-frequency measurement indicates change in best cell.

8.4.1.23.4 Method of test

Initial Condition

System Simulator: 3 cells – The initial configurations of the 3 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.23-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH_DCH_Initial (State 6-1) or PS-DCCH_DCH_ Initial (State 6-3) 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 8.4.1.23-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.23-1

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	-60	-60	-66	-70	-70	Switched off	Switched off	-70	-60

The UE is initially in CELL_DCH state of cell 1. SS then performs a soft handover procedure by sending ACTIVE SET UPDATE message on the downlink DCCH. The UE shall reply with an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH, and include cell 2 to the active set when the activation time specified has elapsed.

SS then ask the UE to perform Intra-frequency measurement and report event 1C and event 1D. In MEASUREMENT CONTROL message, IE 'Replacement activation threshold' is set to 3 and IE 'Cell individual offset' is set to +6 dBm for Cell 3. SS configures itself according to the values in columns "T1" shown above. Cell 3 becomes better than Cell 2 that is in active set of the UE, due to parameter 'Cell Individual offset' for Cell 3. However the UE shall not send MEASUREMENT REPORT message indicating event 1C because number of cells in active set is less than parameter 'Replacement Activation Threshold'.

SS then sends MEASUREMENT CONTROL message to the UE to modify earlier configured intra-frequency measurement. Now, IE 'Replacement activation threshold' is set to 1. MEASUREMENT CONTROL message contains only those IEs that are modified and the UE shall continue to use current values of parameters that are not modified. The UE sends MEASUREMENT REPORT message reporting event 1C, monitored Cell 3 is better than Cell 2 that is in active set. The UE sends second MEASUREMENT REPORT message reporting event 1C after 4 seconds, equals to parameter 'Reporting interval'.

SS then performs soft handover procedure by sending ACTIVE SET UPDATE message on the downlink DCCH. In this message SS commands UE to add Cell 3 and remove Cell 2 from active set. The UE shall reply with an ACTIVE SET UPDATE COMPLETE message. The UE shall also stop periodic reporting of event 1C because the Cell that triggered it is added into active set. SS then configures itself according to the values in columns "T2" shown above. This triggers event 1D and the UE sends MEASUREMENT REPORT message indicating Cell 3 as a best cell.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	ACTIVE SET UPDATE	SS command the UE to add Cell 2 in active set.
2	→		ACTIVE SET UPDATE COMPLETE	
3		←	MEASUREMENT CONTROL	Event 1C and 1D are configured. IE "Replacement activation threshold" is set to 3.
4				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.23-1.
5				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message.
6		←	MEASUREMENT CONTROL	Measurement configured in step 3 is modified to set parameter 'replacement activation threshold' to 1.
7	→		MEASUREMENT REPORT	Event 1C is triggered. The UE shall report that Cell 3 is better than Cell 2.
8	→		MEASUREMENT REPORT	The UE shall send second report after 4 seconds (Reporting interval)
9		←	ACTIVE SET UPDATE	SS command the UE to replace Cell 2 in active set by Cell 3.
10	→		ACTIVE SET UPDATE COMPLETE	
11				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message.
12				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.23-1.
13	→		MEASUREMENT REPORT	The UE shall report event 1D change of best cell

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

ACTIVE SET UPDATE (Step 1)

Information Element	Value/Remark
Radio link addition information	
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 2
- Downlink DPCH info for each RL	
<mark>- CHOICE mode</mark>	<mark>FDD</mark>
- Primary CPICH usage for channel estimation	P-CPICH may be used.
- DPCH frame offset	0 chips
- 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 the parameter set in TS 34.108
- Code number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not present
- TPC combination index	0
- SSDT cell identity	Not present
- Close loop timing adjustment mode	Not present
- TFCI combining indicator	Not present
- SCCPCH information for FACH	Not present
Radio link removal information	Not present

MEASUREMENT CONTROL (Step 3)

Information Element	Value/Remark
Measurement identity	1
Measurement command	Setup
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- Intra-frequency cell removal	Not present
- New intra-frequency info list	
- Intra-frequency cell id	Id of Cell 3
- Cell info	
- Cell individual offset	6 dBm
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 3
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	
- Intra-frequency cell id list	Set to id of cell 1, 2 and 3.
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH RSCP
- Intra-frequency reporting quantity	
- Reporting quantities for active set cells	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
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1C
- Replacement activation threshold	3
- Reporting amount	16
- Reporting interval	4 seconds
- Hysteresis	4
- Time to trigger	10 mSec
- Reporting cell status	Not present
- Intra-frequency event identity	1D
- Hysteresis	4
- Time to trigger	10 mSec
- Reporting cell status	Not present
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 6)

Information Element	Value/Remark
Measurement identity	1
Measurement command	Modify
- CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not present
- Intra-frequency measurement quantity	Not present
- Intra-frequency reporting quantity	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	
- Intra-frequency event identity	1C
- Replacement activation threshold	1
- Reporting amount	16
- Reporting interval	4 seconds
- Hysteresis	4
- Time to trigger	10 mSec
- Reporting cell status	Not present
- Intra-frequency event identity	1D
- Hysteresis	4
- Time to trigger	10 mSec
- Reporting cell status	Not present
Measurement reporting mode	Not present
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 7 and 8)

Information Element	Value/Remarks
Measurement identity	1
Measured results	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Intra Frequency Event results
- Event ID	1C
- Cell measurement event results	
- Primary scrambling code	Primary scrambling code of Cell 3
- Primary scrambling code	Primary scrambling code of Cell 2

ACTIVE SET UPDATE (Step 9)

Information Element	Value/Remark
Radio link addition information	
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 3
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH may be used.
- DPCH frame offset	0 chips
- 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 the parameter set in TS 34.108
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not present
- TPC Combination Index	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	Primary scrambling code of Cell 2

MEASUREMENT REPORT (Step 13)

Information Element	Value/Remarks
Measurement identity	1
Measured results	Check to see if this IE is absent
Measured results on RACH	Check to see if this IE is absent
Additional Measured results	Check to see if this IE is absent
Event results	Intra-frequency event results
- Event ID	1D
- Cell measurement event results	
- Primary scrambling code	Primary scrambling code of Cell 3

8.4.1.23.5 Test Requirement

1.A In steps 7 and 8 the UE shall send MEASUREMENT REPORT message indicating event 1C. IE 'Cell measurement event results' in MEASUREMENT REPORT message shall contain primary scrambling code of Cell 3 and Cell 2 in that order.

1.B In step 5 the UE shall not send MEASUREMENT REPORT message.

1.C In step 11 the UE shall not send MEASUREMENT REPORT message.

2. In step 13 the UE shall send MEASUREMENT REPORT message indicating event 1D. IE 'Cell measurement event results' in MEASUREMENT REPORT message shall contain primary scrambling code of Cell 3.

8.4.1.24 Measurement Control and Report: Inter-frequency measurement for event 2A

8.4.1.24.1 Definition

8.4.1.24.2 Conformance requirement

1. If any of the non- used frequencies quality estimate becomes better than the currently used frequency quality estimate, and event 2A has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) the best primary CPICH on the non-used frequency that triggered the event.

Reference

3GPP TS 25.331 clause 14.2.1.1

8.4.1.24.3 Test Purpose

1.A To confirm that the UE sends MEASUREMENT REPORT message if event 2A is configured, and if any of the non- used frequencies quality estimate becomes better than the currently used frequency quality estimate.

1.B To confirm that the UE does not send MEASUREMENT REPORT message indicating event 2A if hysteresis condition is not fulfilled.

1.C To confirm that the UE does not send MEASUREMENT REPORT message indicating event 2A if time to trigger condition is not fulfilled.

8.4.1.24.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.24-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH_DCH_Initial (State 6-1) or PS-DCCH_DCH_ Initial (State 6-3) 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 8.4.1.24-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "T2", "T3", "T4" and "T5" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.24-1

Parameter	Unit	Cell 1						Cell 4					
		T0	T1	T2	T3	T4	T5	T0	T1	T2	T3	T4	T5
UTRA RF Channel Number		Ch. 1						Ch. 2					
CPICH Ec	dBm	-66	-66	-66	-66	-66	-66	-75	-60	-75	-60	-75	-60

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform measurements of transmitted power using MEASUREMENT CONTROL message. This measurement is setup to confirm that while sending MEASUREMENT REPORT message, the UE sets IE "Additional measured results" correctly. SS then performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode. SS then commands the UE to perform Inter-frequency measurements and report event 2A by sending MEASUREMENT CONTROL message. In MEASUREMENT CONTROL message, IE "Hysteresis" is set to 10 dB and IE "Additional measurement list" is set to id of "UE Internal measurements" configured earlier. SS then configures itself according to the values in columns "T1" shown above. Even though quality estimate for Cell 4 has become better than that of Cell 1, event 2A will not be triggered since hysteresis condition is not fulfilled. SS then configures itself according to the values in columns "T2" shown above.

SS sends MEASUREMENT CONTROL message to modify parameter "Hysteresis" of Inter-frequency measurements to 1 dB. SS then raises power level of Cell 4 according to columns "T3" for short duration (less than 5 seconds), and

again configures itself according to columns "T4" shown above. The UE will not send MEASUREMENT REPORT message because time to trigger condition is not fulfilled. SS then configures itself according to the values in columns "T5" shown above. The UE sends MEASUREMENT REPORT message reporting even 2A as well as measurement of transmitted power.

Important Note: Duration between time instant "T3" and "T4" (between steps 9 and 10 of expected sequence) must be less than 5 seconds.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1		←	MEASUREMENT CONTROL	To setup UE Internal measurement.
2		←	PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4		←	MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2A.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.24-1.
6				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message, as hysteresis condition is not fulfilled.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.24-1.
8		←	MEASUREMENT CONTROL	Modify hysteresis parameter for event 2A.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.24-1.
10				SS re-adjusts the downlink transmission power settings according to columns "T4" in table 8.4.1.24-1. This step should be completed within 5 seconds after completing step 9.
11				Check for 10 seconds, the UE shall not send MEASUREMENT REPORT message, as time to trigger condition is not fulfilled.
12				SS re-adjusts the downlink transmission power settings according to columns "T5" in table 8.4.1.24-1.
13	→		MEASUREMENT REPORT	This message should come at least 5 seconds later after changing power setting of Cell 4.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement identity	1
Measurement command	Setup
CHOICE measurement type	UE internal measurement
- UE internal measurement quantity	
- Measurement quantity	UE transmitted power
- Filter Coefficient	4
- UE internal reporting quantity	
- UE Transmitted Power	TRUE
- CHOICE mode	FDD
- UE Rx-Tx time difference	FALSE
- CHOICE report criteria	No reporting
Measurement reporting mode	Not present
Additional measurements list	Not present
DPCH compressed mode status	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset PPilot-DPDCH	TBD
- DL rate matching restriction information	Not present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- DPCH compressed mode info	
- TGPSI	1
- TGPS status flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- CHOICE UL/DL mode	DL
- Downlink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not present
- DeltaSIRAfter2	Not present
- N identify abort	Not present
- T Reconfirm abort	Not present
- TX diversity mode	None
- SSDT information	Not present
- Default DPCH offset value	0

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
Measurement identity	2
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Id of Cell 4
- Frequency Information	Frequency of Cell 4
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 4
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	0
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- 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
- Measurement validity	CELL_DCH state
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2A
- Used frequency threshold	-72 dBm
- Used frequency W	0
- Hysteresis Inter-frequency	10 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non-used frequency parameter list	
- Non-used frequency threshold	-72 dBm
- Non-used frequency W	0
Measurement reporting mode	
- Measurement reporting transfer mode	Acknowledged mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	
- Measurement identity	1
DPCH compressed mode status info	Not present

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement identity	2
Measurement command	Modify
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	Not present
- Cell for measurement	Not present
- Intra-frequency measurement quantity	Not present
- Inter-frequency reporting quantity	Not present
- Measurement validity	Not present
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2A
- Used frequency threshold	-72 dBm
- Used frequency W	0
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non-used frequency parameter list	
- Non-used frequency threshold	-72 dBm
- Non-used frequency W	0
Measurement reporting mode	Not present
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 13)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 2
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	
- Measured results	UE internal measured results
- UE transmitted power	Check to see if it is present
- UE RX TX report entry list	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2A
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

8.4.1.24.5 Test Requirement

1.A In step 13 the UE shall send MEASUREMENT REPORT message indicating event 2A. IE 'Cell measurement event results' in MEASUREMENT REPORT message shall contain frequency information and primary scrambling code of Cell 4.

1.B In step 6, the UE shall not send MEASUREMENT REPORT message.

1.C In step 11, the UE shall not send MEASUREMENT REPORT message.

8.4.1.25 Measurement Control and Report: Inter-frequency measurement for events 2B and 2E

8.4.1.25.1 Definition

8.4.1.25.2 Conformance requirement

1. When event 2E is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency.

2. When event 2B is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency that triggered the event.

Reference

3GPP TS 25.331 clause 14.2.1.2, 14.2.1.5.

8.4.1.25.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message when event 2E is configured and the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the non-used frequency that triggered the event.

2. To confirm that the UE sends MEASUREMENT REPORT message when event 2B is configured and estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the non-used frequency that triggered the event.

8.4.1.25.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.24-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH_DCH_Initial (State 6-1) or PS-DCCH_DCH_ Initial (State 6-3) 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 8.4.1.25-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.25-1

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 2		
CPICH Ec	dBm	-60	-63	-74	-74	-60	-60

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform Inter-frequency measurements and report event 2B and event 2E by sending MEASUREMENT CONTROL message. SS then performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode. Since quality estimate of non-used frequency is below threshold, the UE sends MEASUREMENT REPORT message indicating event 2E. SS then configures itself according to the values in columns "T1" shown above. Now quality estimate of used and non-used frequency is above threshold and hence neither event 2B nor event 2E will be triggered. SS then configures itself according to the values in columns "T2" shown above. Quality estimate for used frequency is now below threshold, while that of non-used frequency is above threshold, the UE sends MEASUREMENT REPORT message to report event 2B.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2B and 2E.
2	←		PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	→		MEASUREMENT REPORT	The UE shall report event 2E. Time duration between activation of compressed mode and reception of this message should be at least 5 seconds.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.25-1.
6				Check for 10 seconds the UE shall not send measurement report message.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.25-1.
8	→		MEASUREMENT REPORT	The UE shall report event 2B. Time duration between changing power levels according to columns "T2" and reception of this message should be at least 5 seconds.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement identity	4
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Id of Cell 4
- Frequency Information	Frequency of Cell 4
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 4
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	Not present
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2E
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non used frequency parameter list	
- Non used frequency threshold	-66 dBm
- Non used frequency W	0
- Inter-frequency event identity	2B
- Used frequency threshold	-68 dBm
- Used frequency W	4
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Within monitored set non used frequency
- Maximum number of reporting cells	1
- Non used frequency parameter list	
- Non used frequency threshold	-66 dBm
- Non used frequency W	0
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset PPilot-DPDCH	TBD
- DL rate matching restriction information	Not present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- DPCH compressed mode info	
- TGPSI	1
- TGPS status flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- CHOICE UL/DL mode	DL
- Downlink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not present
- DeltaSIRAfter2	Not present
- N identify abort	Not present
- T Reconfirm abort	Not present
- TX diversity mode	None
- SSDT information	Not present
- Default DPCH offset value	0

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 4
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2E
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

MEASUREMENT REPORT (Step 8)

Information Element	Value/Remarks
Measurement identity	4
Measured results	Inter-frequency measured results
- Frequency information	Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN Observed Time Difference	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Mode Specific Info	FDD
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code for cell 4
- CPICH Ec/No	Check to see if it is absent
- CPICH RSCP	Check to see if it is present
- Pathloss	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2B
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

8.4.1.25.5 Test Requirement

1. In step 4 the UE shall send MEASUREMENT REPORT message indicating event 2E. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code of Cell 4.

2. In step 8 the UE shall send MEASUREMENT REPORT message indicating event 2B. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code of Cell 4.

8.4.1.26 Measurement Control and Report: Inter-frequency measurement for events 2D and 2F

8.4.1.26.1 Definition

8.4.1.26.2 Conformance requirement

1. When event 2F is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is above the value of the IE "Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the used frequency.

2. When event 2D is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the used frequency.

Reference

3GPP TS 25.331 clause 14.2.1.4, 14.2.1.6

8.4.1.26.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message when event 2F is configured and estimated quality of the currently used frequency is above the value of the IE "Threshold used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the used frequency.

2. To confirm that the UE sends MEASUREMENT REPORT message when event 2D is configured and estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the used frequency.

8.4.1.26.4 Method of test

Initial Condition

System Simulator: 1 cells – The initial configurations of the cell in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.26-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH_DCH_Initial (State 6-1) or PS-DCCH_DCH_ Initial (State 6-3) in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE.

Test Procedure

Table 8.4.1.26-1 illustrates the downlink power to be applied for the cell at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" is to be applied subsequently. The exact instant on which these values shall be applied is described in the text in this clause.

Table 8.4.1.26-1

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm	-60	-72

The UE is initially in CELL_DCH state of cell 1. SS performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode. SS commands the UE to perform Inter-frequency measurements and report event 2D and/or event 2F by sending MEASUREMENT CONTROL message. Since quality estimate of used frequency is above threshold, the UE sends MEASUREMENT REPORT message indicating event 2F. SS then configures itself according to the values in columns "T1" shown above. Quality estimate for used frequency is now below threshold, the UE sends MEASUREMENT REPORT message to report it.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation.
2	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
3	←		MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2D and 2F.
4	→		MEASUREMENT REPORT	The UE shall report event 2F
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.26-1.
6	→		MEASUREMENT REPORT	The UE shall report event 2D.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset PPilot-DPDCH	TBD
- DL rate matching restriction information	Not present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- DPCH compressed mode info	
- TGPSI	1
- TGPS status flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- CHOICE UL/DL mode	DL
- Downlink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not present
- DeltaSIRAfter2	Not present
- N identify abort	Not present
- T Reconfirm abort	Not present
- TX Diversity Mode	None
- SSDT information	Not present
- Default DPCH Offset Value	0

MEASUREMENT CONTROL (Step 3)

Information Element	Value/Remark
Measurement identity	10
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Any valid identity other than that of Cell 1
- Frequency Information	Any valid frequency other than that of Cell 1
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Any value of Primary scrambling code
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- 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
- Measurement validity	CELL_DCH state
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2D
- Used frequency threshold	-66 dBm
- Used frequency W	0
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Inter-frequency event identity	2F
- Used frequency threshold	-66 dBm
- Used frequency W	0
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2F
- Cell measurement event results	
- Frequency info	Frequency of Cell 1
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 1

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 10
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2D
- Cell measurement event results	
- Frequency info	Frequency of Cell 1
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 1

8.4.1.26.5 Test Requirement

1. In step 4 the UE shall send MEASUREMENT REPORT message indicating event 2F. IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code of Cell 1.

2. In step 6 the UE shall send MEASUREMENT REPORT message indicating event 2D. IE 'Cell measurement event results' in this message shall contain frequency information and primary scrambling code of Cell 1.

8.4.1.27 Measurement Control and Report: UE internal measurement for events 6A and 6B

8.4.1.27.1 Definition

8.4.1.27.2 Conformance requirement

When in CELL_DCH state, the UE shall start to use the new measurement and reporting parameters for UE internal measurement received in the MEASUREMENT CONTROL message. It shall transmit MEASUREMENT REPORT message, which include the measured quantity and event identity, when the reporting criteria is met.

Reference

3GPP TS 25.331, clauses 14.6.2.1 and 14.6.2.2.

8.4.1.27.3 Test Purpose

To confirm that the UE performs UE internal measurements and reporting for events 6A and 6B, when requested by the UTRAN to do so in the MEASUREMENT CONTROL message.

8.4.1.27.4 Method of test

Initial Condition

System Simulator: 1 cell, cell 1.

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

The UE is in CELL_DCH state in cell 1, after successfully executing procedures P11 or P13 as specified in clause 7.4 of TS 34.108. Next, SS transmits MEASUREMENT CONTROL message to request the UE to perform UE internal measurements and reporting for events 6A and 6B.

SS increases the UE Tx power above the threshold set to event 6A. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6A, to SS.

SS decreases the UE Tx power below the threshold set to event 6B. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6B, to SS.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state in cell 1.
2	←		MEASUREMENT CONTROL	SS requests for measurement and reporting of events 6A and 6B.
3				SS sets the UE transmission power above 18 dBm.
4	→		MEASUREMENT REPORT	UE shall send 6A event measurement report.
5				SS sets the UE transmission power below 15 dBm.
6	→		MEASUREMENT REPORT	UE shall send 6B event measurement report.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger Reporting
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- UE internal measurement	
- UE internal measurement quantity	Present
-CHOICE *mode*	FDD
-UE internal measurement quantity	UE Transmitted Power
-Filter coefficient	0
- UE internal reporting quantity	Present
- UE Transmitted Power	TRUE
- CHOICE *mode*	FDD
- UE Rx-Tx time difference	FALSE
- CHOICE *report criteria*	UE internal measurement reporting criteria
- Parameters sent for each UE internal measurement event	
-UE internal event identity	6A
-Time-to-trigger	100 milliseconds
-UE Transmitted Power Tx power threshold	18 dBm
-UE internal event identity	6B
-Time-to-trigger	100 milliseconds
-UE Transmitted Power Tx power threshold	15 dBm
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE *mode*	Check to see if set to "FDD"
UE Transmitted Power	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE *event result*	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6A"
-CHOICE *mode*	Check to see if set to "FDD"
-Primary CPICH info	Check to see if this IE is absent

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 "UE Internal measured results"
- UE internal measured results	
-CHOICE *mode*	Check to see if set to "FDD"
UE Transmitted Power	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE *event result*	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6B"
-CHOICE *mode*	Check to see if set to "FDD"
-Primary CPICH info	Check to see if this IE is absent

8.4.1.27.5 Test Requirement

After step 3, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE transmitted power. The 'Event results' IE contains event identity 6A.

After step 5, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE transmitted power. The 'Event results' IE contains event identity 6B.

8.4.1.28 Measurement Control and Report: UE internal measurement for events 6F and 6G

8.4.1.28.1 Definition

8.4.1.28.2 Conformance requirement

When in CELL_DCH state, the UE shall start to use the new measurement and reporting parameters for UE internal measurement received in the MEASUREMENT CONTROL message. It shall transmit MEASUREMENT REPORT message, which include the measured quantity and event identity, when the reporting criteria is met.

Reference

3GPP TS 25.331, clauses 14.6.2.6 and 14.6.2.7.

8.4.1.28.3 Test Purpose

To confirm that the UE performs UE internal measurements and reporting for events 6F and 6G, when requested by the UTRAN to do so in the MEASUREMENT CONTROL message.

8.4.1.28.4 Method of test

Initial Condition

System Simulator: 1 cell – The initial configuration of the cell 1 in the SS shall follow the values indicated in table 6.1.2 of TS 34.108.

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 6.1.2 of TS 34.108 specifies the radio conditions to be applied for the cells in this test.

The UE is in CELL_DCH state in cell 1, after successfully executing procedures P11 or P13 as specified in clause 7.4 of TS 34.108.

SS then performs an active set update procedure by sending ACTIVE SET UPDATE REQUEST message on the downlink DCCH. Cell 2 is to be added to the active set, according to the content of this downlink message. The UE shall reply with an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH, and include cell 2 to the active set when the activation time specified has elapsed.

Next, SS transmits MEASUREMENT CONTROL message to request the UE to perform UE internal measurements and reporting for events 6F and 6G.

SS adjusts the Tx timing of cell 2 above the threshold set to event 6F. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6F, to SS.

SS adjusts the Tx timing of cell 2 below the threshold set to event 6G. After 'time to trigger' UE sends MEASUREMENT REPORT, triggered by event 6G, to SS.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state in cell 1.
2	←		ACTIVE SET UPDATE	SS asks UE to add cell 2 into the active set.
3	→		ACTIVE SET UPDATE COMPLETE	
4	←		MEASUREMENT CONTROL	SS requests for measurement and reporting of events 6F and 6G.
5				SS switches Tx timing of cell 2 to a delay of -192 chips with respect to cell 1.
6	→		MEASUREMENT REPORT	UE shall send 6F event measurement report.
7				SS switches Tx timing of cell 2 to a delay of 192 chips with respect to cell 1.
8	→		MEASUREMENT REPORT	UE shall send 6G event measurement report.

Specific Message Content

ACTIVE SET UPDATE (Step 2)

The contents of ACTIVE SET UPDATE message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	P-CPICH can be used.
- DPCH frame offset	0 chips
- 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	Reference to TS34.108 clause 6.10 Parameter Set
- Code Number	For each DPCH, assign the same code number in the current code given in cell 1.
- Scrambling code change	Not Present
- TPC Combination Index	0
- SSDT Cell Identity	Not Present
- Close loop timing adjustment mode	Not Present
- TFCI Combining Indicator	Not Present
- SCCPCH information for FACH	Not Present
Radio link removal information	Not Present

ACTIVE SET UPDATE COMPLETE (Step 3)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
Measurement Identity	5
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger Reporting
Additional measurements list	Not Present
CHOICE measurement type	UE internal measurement
- UE internal measurement	
-UE Internal measurement quantity	Present
- CHOICE *mode*	FDD
- Measurement quantity	UE Rx-Tx time difference
- Flter coefficient	0
- UE internal reporting quantity	Present
- UE Transmitted Power	FALSE
- CHOICE *mode*	FDD
- UE Rx-Tx time difference	TRUE
- CHOICE *report criteria*	UE internal measurement reporting criteria
- Parameters sent for each UE internal measurement event	
-UE internal event identity	6F
-Time-to-trigger	0 milliseconds
-UE Rx-Tx time difference threshold	1174
-UE internal event identity	6G
-Time-to-trigger	0 milliseconds
-UE Rx-Tx time difference threshold	874
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 "UE Internal measured results"
- UE internal measured results	
-CHOICE *mode*	Check to see if set to "FDD"
UE Rx-Tx report entries	
- Primary CPICH info	
-Primary scrambling code	Check to see if set to codes assigned for cell 1 & cell 2.
-UE Rx-Tx time difference type 1	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE *event result*	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6F"
-CHOICE *mode*	Check to see if set to "FDD"
-Primary CPICH info	
-Primary scrambling code	Check to see if set to code assigned for cell 2.

MEASUREMENT REPORT (Step 8)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "UE Internal measured results"
- UE internal measured results	
-CHOICE *mode*	Check to see if set to "FDD"
UE Rx-Tx report entries	
- Primary CPICH info	
-Primary scrambling code	Check to see if set to codes assigned for cell 1 & cell 2.
-UE Rx-Tx time difference type 1	Check to see if present and value is reasonable
Measured Results on RACH	Check to see if this IE is absent
Event results	
-CHOICE *event result*	Check to see if set to "UE internal measurement event results"
-UE internal event identity	Check to see if set to "6G"
-CHOICE *mode*	Check to see if set to "FDD"
-Primary CPICH info	
-Primary scrambling code	Check to see if set to code assigned for cell 2.

8.4.1.28.5 Test Requirement

After step 5, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE Rx-Tx time difference. The 'Event results' IE contains event identity 6F.

After step 7, the UE shall transmit MEASUREMENT REPORT message, containing measured results for UE Rx-Tx time difference. The 'Event results' IE contains event identity 6G.

8.4.1.29 Measurement Control and Report: Event based Traffic Volume measurement in CELL_FACH state.

8.4.1.29.1 Definition

8.4.1.29.2 Conformance requirement

Event based transport channel traffic volume measurement compares sum of buffer occupancies of RBs multiplexed onto a transport channel to the threshold, which UE receives from the network. When transport channel traffic volume exceeds threshold UE sends RRC: Measurement Report towards network. Message includes at least indication of measurement identity. In CELL_FACH state UE has only RACH transport channel.

Reference

3GPP TS 25.331, clause 14.4.

8.4.1.29.3 Test Purpose

To verify that in CELL_FACH state when event 4a triggers UE sends RRC: Measurement Report with correct measurement identity and indication of UL transport channel type, radio bearer identities and corresponding RLC buffer payloads in number of bytes.

8.4.1.29.4 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.

System Information Block type 11 nor 12 does not include Traffic Volume measurement system information.

Test Procedure

The UE is brought to the CELL_FACH state after a successful incoming call attempt. The SS follows the procedure in TS 34.108 clause 7.1.3 (Mobile Terminated), to set up a user RAB, but with the default RAB replaced by the one described in 34.108, clause 6.10.2.4.3.2: Interactive/Background 32 kbps PS RAB + SRBs for CCCH + SRB for DCCH + SRB for BCCH for DL and 6.10.2.4.4.1: Interactive/Background 32 kbps PS RAB + SRB for CCCH + SRB for DCCH for UL. The radio bearer is placed into UE test loop mode 1 described in 34.109 clause 5.3. SS sends to UE RRC: MEASUREMENT CONTROL message, which includes traffic volume measurement control parameters eg. uplink transport channel type and reporting threshold. Transport channel traffic volume exceeds threshold and after 'time to trigger' UE sends RRC: MEASUREMENT REPORT to SS. SS does not respond and after 'pending time after trigger' UE sends again same RRC: MEASUREMENT REPORT.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is brought to the CELL_FACH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS provides Traffic Volume measurement criterias to UE.
3	→		MEASUREMENT REPORT	UE reports that Traffic Volume measurement event 4A is triggered.
4	→		MEASUREMENT REPORT	UE repeats message after 1000 ms.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	
- Traffic volume measurement object	
- Uplink transport channel type	RACH
- Traffic volume measurement quantity	
- Measurement quantity	RLC buffer payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE
- Measurement validity	
- UE state	All states
- Traffic volume measurement reporting criteria	
- Traffic volume event identity	4a
- Reporting threshold	8
- Time to trigger	100
- Pending time after trigger	1000
- Tx interruption after trigger	250

MEASUREMENT REPORT (Step 3 and step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	Check that value is correct
- RLC buffers payload	Check that value is reasonable
Measured Results on RACH	Not checked
Additional Measured results	Not checked
Event Results	
- Uplink transport channel type causing the event	Check to see if set to "RACH"
- UL transport channel identity	Check to see that is not set
- Traffic volume event identity	Check to see if set to "4a"

8.4.1.29.5   Test Requirement

In step 3 UE sends RRC: MEASUREMENT REPORT with correct measurement identity indication. RB identity and RLC buffers payload has reasonable values.

In step 4 UE repeats message sent in step 3.

After step 3 UE is not allowed to send user data during the 'Tx interruption after trigger' timer is running.

8.4.1.30   Measurement Control and Report: Event based Traffic Volume measurement in CELL_DCH state.

8.4.1.30.1   Definition

8.4.1.30.2   Conformance requirement

Event based transport channel traffic volume measurement compares sum of buffer occupancies of RBs multiplexed onto a transport channel to the threshold, which UE receives from the network. When transport channel traffic volume exceeds threshold UE sends RRC: Measurement Report towards network. Message includes at least indication of measurement identity. In CELL_DCH state each DCH may have own measurement activated with own threshold.

Reference

3GPP TS 25.331, clause 14.4.

8.4.1.30.3   Test Purpose

To verify that in CELL_DCH state when event 4a or 4b triggers UE sends RRC: Measurement Report with correct measurement identity and indication of uplink transport channel type and identity, radio bearer identities and corresponding RLC buffer payloads in number of bytes.

8.4.1.30.4   Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state, state 6-10 as specified in clause 7.4 of TS 34.108.

System Information Block type 11 nor 12 does not include Traffic Volume measurement system information.

Test Procedure

The UE is brought to the CELL_DCH state after a successful incoming call attempt. The SS follows the procedure in TS 34.108 clause 7.1.3 (Mobile Terminated), to set up a user RAB, but with the default RAB replaced by the one described in 34.108, clause 6.10.2.4.1.26: Interactive or background / UL: 64 DL: 64 kbps / PS RAB + UL: 3.4 DL: 3.4 kbps SRBs for DCCH. The radio bearer is placed into UE test loop mode 1 described in 34.109 clause 5.3. SS sends to UE RRC: MEASUREMENT CONTROL messages, which includes in addition to measurement identity traffic volume measurement control parameters eg. uplink transport channel type and identity and reporting threshold for both events 4a and 4b. Transport channel traffic volume exceeds threshold and after 'time to trigger' UE sends RRC: MEASUREMENT REPORT to SS. SS does not respond and after 'pending time after trigger' UE sends again same RRC: MEASUREMENT REPORT. UE's transport channel load decreases to zero, event 4b triggers and previous signaling procedure repeats.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS provides Traffic Volume measurement criterias (event 4a) to UE.
3	←		MEASUREMENT CONTROL	SS provides Traffic Volume measurement criterias (event 4b) to UE.
4	→		MEASUREMENT REPORT	UE's transport channel is loaded. UE reports that Traffic Volume measurement event 4A is triggered.
5	→		MEASUREMENT REPORT	UE repeats message after 2000 ms.
6	→		MEASUREMENT REPORT	UE's transport channel traffic volume decreases to zero. UE reports that Traffic Volume measurement event 4B is triggered.
7	→		MEASUREMENT REPORT	UE repeats message after 2000 ms.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	
- Traffic volume measurement objects	
- Uplink transport channel type	DCH
- UL target transport channel ID	1
- Traffic volume measurement quantity	
- Measurement quantity	RLC buffer payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE
- Measurement validity	
- UE state	CELL_DCH
- Traffic volume measurement reporting criteria	
- Traffic volume event identity	4a
- Reporting threshold	256
- Time to trigger	100
- Pending time after trigger	2000
- Tx interruption after trigger	Not present

MEASUREMENT CONTROL (Step 3)

Information Element	Value/Remark
Measurement Identity	14
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	
- Traffic volume measurement objects	
- Uplink transport channel type	DCH
- UL target transport channel ID	1
- Traffic volume measurement quantity	
- Measurement quantity	RLC buffer payload
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	TRUE
- Measurement validity	
- UE state	CELL_DCH
- Traffic volume measurement reporting criteria	
- Traffic volume event identity	4b
- Reporting threshold	32
- Time to trigger	100
- Pending time after trigger	2000
- Tx interruption after trigger	Not present

MEASUREMENT REPORT (Step 4 and step 5)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	Check that value is correct
- RLC buffers payload	Check that value is reasonable
Measured Results on RACH	Not checked
Additional Measured results	Not checked
Event Results	
- Uplink transport channel type causing the event	Check to see if set to "DCH"
- UL transport channel identity	Check to see if set to "1"
- Traffic volume event identity	Check to see if set to "4a"

MEASUREMENT REPORT (Step 6 and step 7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 14
Measured Results	
- CHOICE measurement	Check to see if set to "Traffic volume measured results list"
- Traffic volume measurement results	
- RB identity	Check that value is correct
- RLC buffers payload	Check that value is reasonable
Measured Results on RACH	Not checked
Additional Measured results	Not checked
Event Results	
- Uplink transport channel type causing the event	Check to see if set to "DCH"
- UL transport channel identity	Check to see if set to "1"
- Traffic volume event identity	Check to see if set to "4b"

8.4.1.30.5 Test Requirement

In steps 4, 5, 6 and 7 UE sends RRC: MEASUREMENT REPORT with correct measurement identity indication. RB identity and RLC buffers payload has correct values. Measurement identity, transport channel type, transport channel identity and event identity has to match with set values.

8.4.1.31 Measurement Control and Report: Inter-RAT measurement in CELL_DCH state.

8.4.1.31.1 Definition

8.4.1.31.2 Conformance requirement

The UE shall perform GSM RSSI measurements in the gaps of compressed mode pattern sequence specified for GSM RSSI measurement purpose.

The UE shall perform GSM Initial BSIC identification in compressed mode pattern sequence specified for Initial BSIC identification measurement purpose.

Reference

3GPP TS 25.331, clause 14.3.2.

8.4.1.31.3 Test Purpose

Purpose of this test is to verify that UE is capable to perform GSM RSSI and GSM Initial BSIC identification measurements in compressed mode.

8.4.1.31.4 Method of test

Initial Condition

System Simulator: 1 UTRAN FDD cell and 2 GSM cells.

Parameter	Unit	Cell 1 (GSM)	Cell 2 (GSM)
Test Channel	#	1	2
RF Signal Level	dBm	-80	-85
BCCH ARFCN	#	1	7
CELL identity	#	0	1
BSIC	#	BSIC1	BSIC2

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

System Information Block type 11 nor 12 does not include Inter-RAT measurement system information.

Test Procedure

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. SS provides compressed mode pattern sequence parameters to UE by using physical channel reconfiguration procedure. Depending on UE's measurement capability uplink and/or downlink compressed mode is requested. Compressed mode method is SF/2 with 7 slot gap in single frame. Two normal frames is between gapped frames. First RRC: MEASUREMENT CONTROL message is used to provide measurement control parameters (GSM RSSI) to UE and to start compressed mode for measurement. UE replies according to request by sending RRC: MEASUREMENT REPORT messages periodically to SS. Reporting period is 1000 ms. After two RRC: MEASUREMENT REPORT messages, SS sends second RRC: MEASUREMENT CONTROL message to start GSM Initial BSIC identification measurement. UE replies similarly as in GSM RSSI measurement case.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS provides GSM RSSI measurement control parameters to UE. Compressed mode for GSM RSSI measurement is started.
5	→		MEASUREMENT REPORT	UE reports measurement results of GSM RSSI measurement to SS.
6	→		MEASUREMENT REPORT	Next periodical measurement report.
7	←		MEASUREMENT CONTROL	SS provides GSM Initial BSIC identification measurement control parameters to UE. Compressed mode for GSM Intial BSIC identification measurement is started.
8	→		MEASUREMENT REPORT	UE reports measurement results of GSM Initial BSIC identification measurement to SS.
9	→		MEASUREMENT REPORT	Next periodical measurement report.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	3
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 1
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Initial BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	3
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 1
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	128
- T Reconfirm abort	Not Present

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOISE Inter-RAT Cell Removal	Remove no inter-RAT cells
- inter-RAT cell id	0
CHOISE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOISE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOISE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	not required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOISE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOISE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOISE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	inactive
- TGCFN	Not present

MEASUREMENT REPORT (Step 5 and step 6)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOISE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOISE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOISE BSIC	Non verified BSIC
- BCCH ARFCN	Check that is set to "7"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

MEASUREMENT CONTROL (Step 7)

Information Element	Value/Remark
Measurement Identity	15
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Periodical reporting
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not present
CHOISE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
UTRAN estimated quality	FALSE
CHOISE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
- Reporting cell status	
CHOISE reported cell	
- Reported cells within active set or within virtual active set or of the other RAT	
- Maximum number of reported cells	6
CHOISE report criteria	
- Periodical reporting criteria	
- Amount of reporting	infinity
- Reporting interval	1000
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS status flag	inactive
- TGCFN	Not present
- TGPSI	2
- TGPS status flag	active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 8 and step 9)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 15
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOISE system	GSM
- Measured GSM cells	
- GSM carrier RSSI	Check to see if present
CHOISE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "0"
- Observed time difference to GSM cell	Check that not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOISE BSIC	Verified BSIC
- Inter-RAT cell id	Check that is set to "1"
- Observed time difference to GSM cell	Check that not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that not present

8.4.1.31.5 Test Requirement

In step 5 and step 6 UE reports correctly GSM RSSI values.

In step 8 and step 9 UE reports correctly BSIC values.

Reporting period is the requested one.

8.4.1.32 Void

8.4.1.33 Measurement Control and Report: Inter-RAT measurement, event 3a

8.4.1.33.1 Definition

8.4.1.33.2 Conformance requirement

1. When this event is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold own system" and the hysteresis and time to trigger conditions are fulfilled and the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled.

2. If the IE "DPCH Compressed Mode Status Info" is present, [in the MEASUREMENT CONTROL message]:

   - after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:

     - activate the pattern sequence stored in the variable TGPS_IDENTITY corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "active" at the time indicated by IE "TGCFN"; and

     - begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

     - if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:

       - start the concerned pattern sequence immediately at that CFN;

   - not alter pattern sequences stored in variable TGPS_IDENTITY, but not identitifed in IE "TGPSI"

3. The UE shall perform GSM RSSI measurements in the gaps of compressed mode pattern sequence specified for GSM RSSI measurement purpose. The UE shall perform Initial BSIC identification in compressed mode pattern sequence specified for Initial BSIC identification measurement purpose. The UE shall be able to measure the

"Observed time difference to GSM cell" during a compressed mode pattern sequence configured for this purpose. The UE shall perform BSIC re-confirmation in compressed mode pattern sequence specified for BSIC re-confirmation measurement purpose.

4. If the IE "Inter-RAT measurement quantity" is received in a MEASUREMENT CONTROL message and CHOICE system is GSM, the UE shall:

  - if IE "BSIC verification required" is set to "required", for cells that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list", and that has a "verified" BSIC:

    - report measurement quantities according to IE "inter-RAT reporting quantity" taking into account the restrictions defined in TS 25.331 clause 8.6.7.6;

    - trigger inter-RAT events according to IE "inter-RAT measurement reporting criteria"; and

  - perform event evaluation for event-triggered reporting after BSIC has been verified for a GSM cell

  - indicate non-verified BSIC for a GSM cell in the "Inter-RAT measured results list" IE

5. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity".

6. If IE "Observed time difference to GSM cell" is set to "TRUE" [, the UE shall]:

  include optional IE "Observed time difference to GSM cell" with the value set to the time difference to that GSM cell for the GSM cells that have a BSIC that is "verified", and that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list".

  - if IE "GSM Carrier RSSI" is set to "TRUE"[, the UE shall]:

    - include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list".

  - if the BSIC of reported GSM cell is "verified"[, the UE shall]:

    - set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list";

7. If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows.

  - the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" is the number specified in "Reporting Cell Status".

Reference

3GPP TS 25.331 clauses 8.4.1.3, 8.6.7.5, 8.6.7.6, 8.6.7.9, 14.3.1.1, 14.3.2.1, 14.3.2.2, 14.3.2.3.

8.4.1.33.3   Test Purpose

1. To confirm that the UE starts compressed mode and inter-RAT measurements when so required by the network in a MEASUREMEN CONTROL message.

2. To confirm that the UE sends MEASUREMENT REPORT message if event 3a is configured, if the quality of the currently used UTRAN frequency is below a given threshold and the estimated quality of the other system is above a certain threshold.

3. To confirm that the hysteresis and time to trigger behaviours for event 3a are correctly implemented.

4. To confirm that the UE verifies the BSIC of the cell triggering the event if so required by UTRAN and if the proper compressed mode patterns have been configured in the UE by UTRAN.

5. To confirm that the content of the MEASUREMENT REPORT sent by the UE is according to what was required by UTRAN.

NOTE: Test purpose 1 verifies conformance requirement 1 and 2.

NOTE: Test purpose 2 and 3 verifies conformance requirement 1.

NOTE: Test purpose 4 verifies conformance requirement 2, 3 and 4.

NOTE: Test purpose 5 verifies conformance requirement 4, 5, 6 and 7.

8.4.1.33.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 3 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.33.4-1

Parameter	Unit	Cell 1 (GSM)					Cell 2 (GSM)					Cell 3 (GSM)				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
Test Channel	#	GSM Ch.1					GSM Ch.2					GSM Ch.3				
BCCH ARFCN	#	1					7					2				
CELL identity	#	0					1					2				
BSIC	#	BSIC 1					BSIC 2					BSIC 3				
RF Signal Level	dBm	-85	-85	-70	-82	-70	-85	-85	-85	-77	-77	-90	-90	-90	-90	-90

Table 8.4.1.33.4-2

Parameter	Unit	Cell 1 (UTRA)			
		T0	T1	T2	T3
UTRA RF Channel Number		Ch.1			
CPICH Ec/No	dB	-5	-20	-20	-20

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3a is set up in this message, and compressed mode is activated.

At instant T1, the CPICH Ec/No drops as described in table 8.4.1.33.4-2.

At instant T2, the RF signal for GSM cell 1 increases, and crosses the threshold for the other system defined for event 3a.

After reception of the MEASUREMENT REPORT message, at instant T3, the RF signal strength for GSM cell 2 increases above the threshold for the other system for event 3a. During that time, the RF signal strength for GSM cell 1 has dropped above the threshold for the other system for event 3a, but remains above threshold-hysteresis for event 3a.

At intant T4, the RF signal strength for GSM cell 1 increases above the threshold for the other system for event 3a+hysteresis.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3a in the UE. Compressed mode is started.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
6				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
8	→		MEASUREMENT REPORT	After about 640 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 3a.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
11				SS re-adjusts the downlink transmission power settings according to columns "T4" in tables 8.4.1.33.4-1 and 8.4.1.33.4-2.
12				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	12
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence	

configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=3
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	2
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	2
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	
- Intra-frequency measurement quantity	
- Filter coefficient	0
- CHOICE mode	FDD
- Measurement quantity	Ec/No
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	TRUE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3a
- Threshold own system	-12
- W	0
- Threshold other system	-80
- Hysteresis	5
- Time to Trigger	640 ms
- Reporting cell status	2 cells
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	Not present
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	active
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	

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MEASUREMENT REPORT (Step 8)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1.
- Observed time difference to GSM cell	Check that the IE is present and that the reported value is reasonable
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 or 0 depending on the value of the previous inter-RAT cell id. (The value here shall be the one not chosen for the previous inter-RAT cell id).
- Observed time difference to GSM cell	Check that the IE is present and that the reported value is reasonable
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3a
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.33.5 Test requirement

The UE shall not send any measurement report between instants T1 and T2.

Event 3a shall be triggered in the UE (i.e.the transmission of the MEASUREMENT REPORT) about 0.64 s after instant T2.

Between instants T2 and T3, no MEASUREMENT REPORT message shall be received from the UE (since the hysteresis condition for triggering event 3a is not fulfilled).

No MEASUREMENT REPORT message shall be received from the UE after instant T4 (since the signal strength for cell 1 has not dropped under Threshold for event 3a-hysteresis).

8.4.1.34 Measurement Control and Report: Inter-RAT measurement, event 3b

8.4.1.34.1 Definition

8.4.1.34.2 Conformance requirement

1. When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is below the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

2. If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL_INFO_LIST accordingly and in the following order. The UE shall:

- if the IE "Removed Inter-RAT cells" is received, at the position indicated by the IE "Inter-RAT cell id":

    - clear the cell information stored in the variable CELL_INFO_LIST; and

    - mark the position "vacant";

- if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:

    - update the variable CELL_INFO_LIST as follows:

        - if the IE "Inter-RAT cell id" is received:

            - store received cell information at this position in the Inter-RAT cell info list in the variable CELL_INFO_LIST, possibly overwriting any existing information in this position; and

            - mark the position "occupied";

        - if the IE "Inter-RAT cell id" is not received:

            - store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL_INFO_LIST; and

    - mark the position as "occupied";

Reference

3GPP TS 25.331 clause 8.6.7.3, 14.3.1.2

8.4.1.34.3 Test Purpose

1 To confirm that the UE sends MEASUREMENT REPORT message if event 3b is configured, if the estimated quality of the other system is below a given threshold.

2 To confirm that the hysteresis and time to trigger behaviours for event 3b are correctly implemented. To confirm that the UE updates the list of inter-RAT cells it stores according to what is ordered in the MEASUREMENT CONTROL messages received from UTRAN.

8.4.1.34.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 3 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.34.4-1

Parameter	Unit	Cell 1 (GSM)		Cell 2 (GSM)		Cell 3 (GSM)	
		T0	T1	T0	T1	T0	T1
Test Channel	#	GSM Ch.1		GSM Ch.2		GSM Ch.3	
BCCH ARFCN	#	1		7		2	
CELL identity	#	0		1		2	
BSIC	#	BSIC 1		BSIC 2		BSIC 3	
RF Signal Level	dBm	-70	-90	-70	-70	-90	-90

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1" indicates the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3b is set up in this message, and compressed mode is activated. The monitored GSM cells at measurement establishment are GSM cells 1 and 2.

At instant T1, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.34.4-1.

When the MEASUREMENT REPORT has been received by the SS, a MEASUREMENT CONTROL message is sent to the UE, to add GSM cell 3 to the monitored GSM cells.

A second MEASUREMENT REPORT triggered by event 3b shall be received shortly after by the SS.

Expected Sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3b in the UE. Compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.34.4-1.
7	→		MEASUREMENT REPORT	After about 60 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8	←		MEASUREMENT CONTROL	SS adds GSM cell 3 to the list of the monitored GSM cells.
9	→		MEASUREMENT REPORT	After about 60 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	12
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence	

configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL(depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=2
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3b
- Threshold own system	Not included
- W	Not included
- Threshold other system	-80
- Hysteresis	2
- Time to Trigger	60 ms
- Reporting cell status	3 cells
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	Not present
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	active
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	active
- TGCFN	(Current CFN + (254 – TTI/10msec))mod 256
- TGPSI	3
- TGPS status flag	active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
-Inter-RAT event identity	Check that this is set to 3b
-Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement Identity	3
Measurement Command	Modify
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Not present
- Periodic Reporting / Event Trigger Reporting Mode	Not present
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove no inter-RAT cells
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=1
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	2
- Cell for measurement	Not present
- inter-RAT measurement quantity	Not present
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3b
- Threshold own system	Not present
- W	Not present
- Threshold other system	-80
- Hysteresis	2
- Time to Trigger	60 ms
- Reporting cell status	Not present
Physical channel information elements	Not present

MEASUREMENT REPORT (Step 9)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for three GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0, 1 or 2
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 0, 1 or 2 and that this inter-RAT cell id is different from the previous inter-RAT cell id.
- Observed time difference to GSM cell	Check that the IE is not present
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 0, 1 or 2 and that this inter-RAT cell id is different from the two previous inter-RAT cell id.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
-Inter-RAT event identity	Check that this is set to 3b
-Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 2.

8.4.1.34.5 Test requirement

Between instants T0 and T1, the UE shall not send any MEASUREMENT REPORT message to the SS.

Event 3b shall be triggered in the UE (i.e. the transmission of the first MEASUREMENT REPORT message shall begin) about 60 ms after instant T1.

About 60 ms after the reception by the UE of the second MEASUREMENT CONTROL message, the UE shall begin to transmit the second MEASUREMENT REPORT message (since the signal strength for GSM cell 3 is below the threshold for triggering event 3b).

8.4.1.35 Measurement Control and Report: Inter-RAT measurement, event 3c

8.4.1.35.1 Definition

8.4.1.35.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system. For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement.

Reference

3GPP TS 25.331 clauses 14.3.1.3, 8.4.2.2.

8.4.1.35.3 Test Purpose

1 To confirm that the UE sends MEASUREMENT REPORT message if event 3c is configured, and if the quality of the other system becomes better than the given threshold for event 3c.

2 To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3c as long as the hysteresis condition for triggering once again event 3c has not been fulfilled.

8.4.1.35.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.35.4-1

Parameter	Unit	Cell 1 (GSM)				Cell 2 (GSM)			
		T0	T1	T2	T3	T0		T1	
Test Channel	#	GSM Ch.1				GSM Ch.2			
BCCH ARFCN	#	1				7			
CELL identity	#	0				1			
BSIC	#	BSIC 1				BSIC 2			
RF Signal Level	dBm	-90	-80	-90	-80	-80	-80	-80	-80

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3c is set up in this message, and compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases as described in table 8.4.1.35.4-1.

At instant T2, the RF signal strength for GSM cell 2 drops as described in table 8.4.1.35.4-1, and at instant T3, it increases again to its previous level.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3c in the UE. Compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.35.4-1.
7	→		MEASUREMENT REPORT	After about 100 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8				SS re-adjusts the downlink transmission power settings according to columns "T2" in tables 8.4.1.35.4-1.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in tables xxxx and xxxx.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	12
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence	

configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL(depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=2
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	10
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3c
- Threshold own system	Not included
- W	Not included
- Threshold other system	-80
- Hysteresis	5
- Time to Trigger	100 ms
- Reporting cell status	2 cells
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	Not present
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	active
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	active
- TGCFN	(Current CFN + (254 – TTI/10msec))mod 256
- TGPSI	3
- TGPS status flag	active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
-Inter-RAT event identity	Check that this is set to 3c
-Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.35.4 Test requirement

About 100 ms after instant T1, since the cell individual offset for GSM cell 1 is +10 dB, event 3c shall be triggered in the UE, i.e the UE shall begin to transmit a MEASUREMENT REPORT to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is 0 dB.

After instant T2, no MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for it to trigger the event once again.

8.4.1.36 Measurement Control and Report: Inter-RAT measurement, event 3d

8.4.1.36.1 Definition

8.4.1.36.2 Conformance requirement

If any of the quality estimates for the cells in the other system becomes better than the quality estimate for the currently best cell in the other system, and event 3d has been ordered by UTRAN then this event shall trigger a report to be sent from the UE when the hysteresis and time to trigger conditions is fulfilled. The corresponding report contains (at least) information the best cell in the other system.

Reference

3GPP TS 25.331 clause 14.3.1.4.

8.4.1.36.3 Test Purpose

To confirm that the UE sends MEASUREMENT REPORT message if event 3d is configured, and if the best cell changes in the other system. To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a

cell that has already triggered event 3d as long as the hysteresis condition for triggering once again event 3d has not been fulfilled.

8.4.1.36.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the 4 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.36.4-1

Parameter	Unit	Cell 1 (GSM)		Cell 2 (GSM)	
		T0	T2	T0	T1
Test Channel	#	GSM Ch.1		GSM Ch.2	
BCCH ARFCN	#	1		7	
CELL identity	#	0		1	
BSIC	#	BSIC 1		BSIC 2	
RF Signal Level	dBm	-70	-90	-90	-70

The two tables above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements. Event 3d is set up in this message, and compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases while the RF signal strength for GSM cell 2 decreases as described in table 8.4.1.36.4-1.

A MEASUREMENT CONTROL is then sent to the UE that releases the inter-RAT measurement, and deactivates compressed mode.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3d in the UE. Compressed mode is started.
5	→		MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to UTRAN indicating which is the best GSM cells just after the initiation of the measurement
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in tables 8.4.1.36.4-1.
7	→		MEASUREMENT REPORT	After about 200 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 3b.
8	←		MEASUREMENT CONTROL	SS releases the inter-RAT measurements, and deactivates compressed mode.
9				SS checks that the UE has deactivated compressed mode.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL(depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL (depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	12
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence	

configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	8
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL(depends on UE's Measurement capability)
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	5 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=2
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	Not present
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- Cell for measurement	Not present
- inter-RAT measurement quantity	
- Measurement quantity for UTRAN quality estimate	Not included
CHOICE system	GSM
- Measurement quantity	GSM carrier RSSI
- Filter coefficient	0
- BSIC verification required	required
- inter-RAT reporting quantity	
CHOICE system	GSM
- Observed time difference to to GSM cell reporting indicator	FALSE
- GSM carrier RSSI reporting indicator	TRUE
CHOICE report criteria	
- Inter-RAT measurements reporting criteria	
- Parameters required for each event (1 to<maxMeasEvent>)	<MaxMeasEvent>=1
- Inter-RAT event identity	3d
- Threshold own system	Not present
- W	Not present
- Threshold other system	Not present
- Hysteresis	5
- Time to Trigger	200 ms
- Reporting cell status	2 cells
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	Not present
- Transmission gap pattern sequence (1 to <MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	active
- TGCFN	(Current CFN + (252 – TTI/10msec))mod 256
- TGPSI	2
- TGPS status flag	active
- TGCFN	(Current CFN + (254 – TTI/10msec))mod 256
- TGPSI	3
- TGPS status flag	active
- TGCFN	(Current CFN + (256 – TTI/10msec))mod 256

MEASUREMENT REPORT (Step 5)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
-Inter-RAT event identity	Check that this is set to 3d
-Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

MEASUREMENT REPORT (Step 7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
-Inter-RAT event identity	Check that this is set to 3d
-Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 1.

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement Identity	3
Measurement Command	Release
Physical channel information elements	
- DPCH compressed mode status info	
- TGPS reconfiguration CFN	(Current CFN + (256 – TTI/10msec))mod 256
- Transmission gap pattern sequence (1 to	
<MaxTGPS>)	<MaxTGPS>=3
- TGPSI	1
- TGPS status flag	Inactive
- TGCFN	Not present
- TGPSI	2
- TGPS status flag	Inactive
- TGCFN	Not present
- TGPSI	3
- TGPS status flag	Inactive
- TGCFN	Not present

8.4.1.35.4 Test requirement

Shortly after the UE has received the first MEASUREMENT CONTROL message it shall transmit a MEASUREMENT REPORT to the SS.

About 200 ms after instant T1, the UE shall begin to transmit a MEASUREMENT REPORT triggered by event 3d to the SS.

After receiving the second MEASUREMENT CONTROL message, the UE shall then stop running compressed mode.

8.4.1.37 Measurement Control and Report: UE internal measurement, event 6c

8.4.1.37.1 Definition

8.4.1.37.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the UE Tx power reaches its minimum value.

Reference

3GPP TS 25.331 clause 14.6.2.3.

8.4.1.37.3 Test Purpose

To confirm that the UE sends a measurement report for event 6c when the UE Tx power reaches its minimum value when event 6c has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.37.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell.

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108.

The SS sends a MEASUREMENT CONTROL message to the UE that configures event 6c.

The SS sends TPC_cmd equal to -1 until the transmitter power of the UE reaches its minimum value.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS configures event 6c in the UE.
3	←			The SS sends TPC_cmd equal to -1 until the transmitter power of the UE reaches its minimum value, which shall be below –50 dBm.
4	→		MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to SS triggered by event 6c.

Specific message content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- UE internal measurement	
- UE internal measurement quantity	UE Transmitter Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted power	TRUE
- CHOICE mode	
- UE Rx-Tx time difference	FALSE
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	event 6c
- Time to trigger	0

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "UE internal measurement"
- UE internal measured results	
- UE Transmitted Power	Check that this IE is set a value that is below −50 dBm.
- UE Rx-Tx report entities	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6c
CHOICE *mode*	
Primary CPICH info	This IE should not be included

8.4.1.37.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6c when its transmit power has reached its minimum output power. The minimum transmitted power of the UE shall be less than −50dBm.

8.4.1.38 Measurement Control and Report: UE internal measurement, event 6d

8.4.1.38.1 Definition

8.4.1.38.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the UE Tx power reaches its maximum value.

Reference

3GPP TS 25.331 clause 14.6.2.4

8.4.1.38.3 Test Purpose

To confirm that the UE sends a measurement report for event 6d when the UE Tx power reaches its maximum value when event 6d has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.38.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell .

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108.

The SS sends TPC_cmd equal to +1 until the transmitter power of the UE reaches its maximum value.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS configures event 6d in the UE.
3	←			The SS sends TPC_cmd equal to +1 until the transmitter power of the UE reaches its maximum value.
4	→		MEASUREMENT REPORT	After about 200 ms, the UE sends a MEASUREMENT REPORT to SS triggered by event 6d.

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- UE internal measurement	
- UE internal measurement quantity	UE Transmitter Power
- Filter coefficient	0
- UE internal reporting quantity	
- UE Transmitted power	TRUE
- CHOICE mode	
- UE Rx-Tx time difference	FALSE
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	event 6d
- Time to trigger	200

MEASUREMENT REPORT (Step 3)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "UE internal measurement"
- UE internal measured results	
- UE Transmitted Power	Check that this IE is set to the maximum outpower of the UE.
- UE Rx-Tx report entities	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6d
CHOICE *mode*	
Primary CPICH info	This IE should not be included

8.4.1.38.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6d when its transmit power has reached its maximum. The maximum transmitted power of the UE shall be according to the class of the UE.

8.4.1.39 Measurement Control and Report: UE internal measurement, event 6e

8.4.1.39.1 Definition

8.4.1.39.2 Conformance requirement

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the UE RSSI reaches the UE's dynamic receiver range.

Reference

3GPP TS 25.331 clause 14.6.2.5

8.4.1.39.3 Test Purpose

To confirm that the UE sends a measurement report for event 6e when the UE RSSI reaches the UE's dynamic receiver range when event 6e has been configured in the UE through a MEASUREMENT CONTROL message.

8.4.1.39.4 Method of test

Initial Condition

System simulator: 1 UTRAN FDD cell .

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108.

The SS increases its output power by 0.5 dB step until the UE RSSI reaches the UE's receiver dynamic range.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		MEASUREMENT CONTROL	SS configures event 6e in the UE.
3	←			The SS increases its output power by 0.5 dB steps until the UE RSSI reaches the UE's receiver dynamic range.
4	→		MEASUREMENT REPORT	The UE sends a MEASUREMENT REPORT to SS triggered by event 6e.

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement Identity	6
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- UE internal measurement	
- UE internal measurement quantity	UTRA Carrier RSSI
- Filter coefficient	0
- UE internal reporting quantity	Not included
CHOICE report criteria	
- UE internal measurement reporting criteria	
- Parameters sent for each UE internal measurement event	1 event
- UE internal event identity	event 6e
- Time to trigger	0

MEASUREMENT REPORT (Step 3)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 6
Measured Results	Check that this IE is not included
Measured results on RACH	Check that this IE is not included
Additional measured results	Check that this IE is not included
Event Results	
CHOICE *event result*	Check that this IE is set to UE internal measurement event results
UE internal measurement results	
UE internal event identity	Check that this IE is set to 6e
CHOICE *mode*	
Primary CPICH info	This IE should not be included

8.4.1.39.5 Test requirement

The UE shall then begin transmitting a MEASUREMENT REPORT message to SS triggered by event 6e when the UE RSSI reaches the UE's receiver dynamic range.

8.4.1.40 Measurement Control and Report: Inter-RAT measurement, event 3C, in CELL_DCH state using sparse compressed mode pattern

8.4.1.40.1 Definition

8.4.1.40.2 Conformance requirement

1. Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in 3GPP TS 25.331 clause 8.6 unless otherwise specified below.

   The UE shall:

   - read the IE "Measurement command";

   - if the IE "measurement command" has the value "setup":

- store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", possibly overwriting the measurement previously stored with that identity;

- for measurement types "inter-RAT measurement" or "inter-frequency measurement":

  - if, according to its measurement capabilities, the UE requires compressed mode to perform the measurements and a compressed mode pattern sequence with an appropriate measurement purpose is simultaneously activated by the IE "DPCH compressed mode status info"; or

  - if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements:

    - begin measurements according to the stored control information for this measurement identity;

2. Event 3c: The estimated quality of other system is above a certain threshold. When this event is ordered by UTRAN in a measurement control message the UE shall send a report when the estimated quality of the other system is above the value of the IE "Threshold other system" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains information specific for the other system.

Reference

3GPP TS 25.331 clause 8.4.1.3, 14.3.1.3.

8.4.1.40.3 Test Purpose

1. To verify that the UE performs Inter-RAT measurement using a sparse compressed mode pattern as specified in the MEASUREMENT CONTROL message.

2. To verify that the UE send MEASUREMENT REPORT message when event 3C is triggered, and if the quality of the other system becomes better than the given threshold for event 3c.

3. To confirm that no other UE MEASUREMENT REPORT message is sent by the UE for a cell that has already triggered event 3c as long as the hysteresis condition for triggering once again event 3c has not been fulfilled.

8.4.1.40.4 Method of test

Table 8.4.1.40.4.1 Sparse compressed mode pattern for Inter.RAT measurement

TGMP	TGCFN	TGPRC	TGSN	TGL1	TGL2	TGD	TGPL1	TGPL2	Comment
GSM carrier RSSI measurement	Note 1	Inf.	4	7	Not sent	0	16	16	Set-up to monitor 12 GSM neighbours every second measurement period, i.e. every second 480ms period.
GSM Initial BSIC identification	Note 1	Inf.	8	14	Not sent	0	24	24	Equal to Pattern 6 in TS 25.133 table 8.7.
GSM BSIC re-confirmation	Note 1	Inf.	8	14	Not sent	0	24	24	Equal to Pattern 12 in TS 25.133 table 8.8.

NOTE 1: TGCFN can be found in the MEASUREMENT CONTROL message.

Initial Condition

System simulator: 1 UTRAN FDD cell and 2 GSM cells. The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked T0. The table is found in "Test procedure".

UE: CELL_DCH state, state 6-9 as specified in clause 7.4 of TS 34.108.

Test procedure

Table 8.4.1.40.4.2 Inter-RAT cell specific data

Parameter	Unit	Cell 1 (GSM)				Cell 2 (GSM)			
		T0	T1	T2	T3	T0	T1	T2	T3
Test Channel	#	GSM Ch.1				GSM Ch.2			
BCCH ARFCN	#	1				3			
CELL identity	#	0				1			
BSIC	#	BSIC 1				BSIC 2			
RF Signal Level	dBm	-90	-80	-90	-80	-80	-80	-80	-80

GSM cell 3 to 12 as indicated in the a MEASUREMENT CONTROL message shall not be active in the test, i.e. no BCCH carrier shall be transmitted for GSM cell 3 to 12 in this test.

The table above illustrate the downlink power to be applied for the two cells at various instants of the test execution. Column marked "T0" denotes the initial conditions, while column marked "T1", "T2" and "T3" indicate the values to be applied subsequently.

The UE is initially in CELL_DCH, state 6-9 as specified in clause 7.4 of TS 34.108. UTRA cell 1 is the only cell in the active set of the UE. The SS sends a PHYSICAL CHANNEL RECONFIGURATION message to the UE to configure the compressed mode pattern sequence parameters to the UE. Three compressed mode patterns are configured, according to the message specified below. When the PHYSICAL CHANNEL RECONFIGURATION COMPLETE is received from the UE, the SS sends a MEASUREMENT CONTROL message to the UE, to set up inter-RAT measurements on 12 GSM cells. Event 3c is set up in this message, and compressed mode is activated.

At instant T1, the RF signal strength for GSM cell 1 increases as described in table 8.4.1.40.4.2, since the cell individual offset for GSM cell 1 is 10 dB, event 3c shall be triggered in the UE. A MEASUREMENT REPORT shall be sent to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is 0 dB.

At instant T2, the RF signal strength for GSM cell 1 drops as described in table 8.4.1.40.4.2, and at instant T3, it increases again to its previous level. No MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for it to trigger the event once again.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_DCH state in the cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	Compressed mode pattern sequence parameters are loaded to UE.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	←		MEASUREMENT CONTROL	SS configures event 3c in the UE. Compressed mode is started.
5				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.
6				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.40.4.2.
7	→		MEASUREMENT REPORT	After about 2 s, the UE sends a MEASUREMENT REPORT to SS triggered by event 3c.
8				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.40.4.2.
9				SS re-adjusts the downlink transmission power settings according to columns "T3" in table 8.4.1.40.4.2.
10				SS waits for approximately 10 seconds and verifies that no MEASUREMENT REPORT messages are detected on uplink DCCH.

Specific Message Content

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type in Annex A titled "Speech in CS", with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM Carrier RSSI Measurement
- TGPRC	Infinity
- TGSN	4
- TGL1	7
- TGL2	Not present
- TGD	0
- TGPL1	16
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2

- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	Not Present
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC identification
- TGPRC	Infinity
- TGSN	8
- TGL1	14
- TGL2	Not present
- TGD	0
- TGPL1	24
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	21
- T Reconfirm abort	Not Present
- TGPSI	3
- TGPS Status Flag	Inactive
- TGCFN	Not present
- Transmission gap pattern sequence configuration parameters	
- TGMP	GSM BSIC re-confirmation
- TGPRC	Infinity
- TGSN	8
- TGL1	14
- TGL2	Not present
- TGD	0
- TGPL1	24
- TGPL2	Not present
- RPP	Mode 1
- ITP	Mode 0
CHOICE UL/DL Mode	UL and DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	1.0
- DeltaSIRAfter1	0.5
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- N identify abort	Not Present
- T Reconfirm abort	4.8 s

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark

Measurement Identity	3
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event triggered
Additional measurements list	Not Present
CHOICE measurement type	
- inter-RAT measurement	
- inter-RAT measurement object list	
CHOICE Inter-RAT Cell Removal	Remove all inter-RAT cells
-Remove all inter-RAT cells	(No Data)
New inter-RAT cells (1 to <MaxCellMeas>)	MaxCellMeas=12
- inter-RAT cell id	0
CHOICE Radio Access Technology	GSM
- Cell individual offset	10
- Cell selection and re-selection info	Not present
- BSIC	BSIC1
- Band indicator	DCS 1800 band used
- BCCH ARFCN	1
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	3
- inter-RAT cell id	1
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC2
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	2
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC3
- Band indicator	DCS 1800 band used
- BCCH ARFCN	5
- inter-RAT cell id	3
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC4
- Band indicator	DCS 1800 band used
- BCCH ARFCN	7
- inter-RAT cell id	4
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC5
- Band indicator	DCS 1800 band used
- BCCH ARFCN	9
- inter-RAT cell id	5
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC6
- Band indicator	DCS 1800 band used
- BCCH ARFCN	11
- inter-RAT cell id	6
CHOICE Radio Access Technology	GSM
- Cell individual offset	0
- Cell selection and re-selection info	Not present
- BSIC	BSIC7
- Band indicator	DCS 1800 band used
- BCCH ARFCN	13
- inter-RAT cell id	7
CHOICE Radio Access Technology	GSM
- Cell individual offset	0

MEASUREMENT REPORT (Step 7)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 3
Measured Results	
- CHOICE measurement	Check to see if set to "Inter-RAT measured results list"
- Inter-RAT measured result list	
- CHOICE system	GSM
- Measured GSM cells	Check that measurement results for two GSM cells are included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Check it is set to verified BSIC
- inter-RAT cell id	Check that it is set to either 0 or 1
- Observed time difference to GSM cell	Check that the IE is not included
- GSM carrier RSSI	Check that measurement result is reasonable
CHOICE BSIC	Verified BSIC
- inter-RAT cell id	Check that is set to 1 if the previous inter-RAT cell id was set to 0 or to 0 if the previous cell if was set to 1.
- Observed time difference to GSM cell	Check that the IE is not present
Measured results on RACH	Check that not present
Additional Measured results	Check that not present
Event results	Check that the IE is included
- CHOICE event result	Check that this is set to inter-RAT measurement event results
- Inter-RAT event identity	Check that this is set to 3c
- Cells to report (1 to <maxCellMeas>)	Check that <maxCellMeas> is set to 1
- CHOICE BSIC	Check that this is set to verified BSIC
- Inter-RAT cell id	Check that this is set to 0.

8.4.1.40.5 Test Requirement

About 2 s after instant T1, since the cell individual offset for GSM cell 1 is +10 dB, event 3c shall be triggered in the UE, i.e the UE shall begin to transmit a MEASUREMENT REPORT to the SS. Note that GSM cell 2 has not triggered event 3c even though the RF signal strength for GSM cell 2 is the same as for cell 1, because the cell individual offset for GSM cell 2 is 0 dB.

After instant T2, no MEASUREMENT REPORT shall be received from the UE, since GSM cell 1 has already triggered event 3c, and since the RF signal strength has not dropped enough for it to trigger the event once again.

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

T1-020332

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020242

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** CR **207** | ⌘**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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Removal of default message contents in Annex A	
Source: ⌘	MCI	
Work item code: ⌘	TEI	***Date:*** ⌘ 10th May 2002

Category: ⌘	**F**		***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	To move default message content in Annex A of TS 34.123-1 to clause 9 of TS 34.108.
Summary of change: ⌘	Default messages contents in Annex A have been removed and a statement to refer to the default message contents in clause 9 of TS 34.108 has been added.
Consequences if not approved: ⌘	Default RRC message content will be duplicated in two specs.

Clauses affected: ⌘	Annex A
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Affects R'99 and R'4 UE test cases.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

Annex A (normative):
Default RRC Message Contents

The default RRC message contents are provided in clause 9 of 3GPP TS 34.108 [9].

A.1   Default RRC Message Contents (FDD)

This clause contains the default values of RRC messages, other than those specified in TS 34.108 clauses 6 and 9. Unless indicated otherwise in specific test cases, they shall be transmitted by the system simulator in RRC messages, and which are required to be received from the UE under test.

The necessary L3 messages are listed in alphabetic order, with the exception of the SYSTEM INFORMATION messages, where it is the information elements which are listed in alphabetic order (this is because some information elements occur in several SYSTEM INFORMATION types).

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Default SYSTEM INFORMATION:

NOTE: SYSTEM INFORMATION BLOCK TYPE 1 (except for PLMN type "GSM MAP"), SYSTEM INFORMATION BLOCK TYPE 8, SYSTEM INFORMATION BLOCK TYPE 9, SYSTEM INFORMATION BLOCK TYPE 10, SYSTEM INFORMATION BLOCK TYPE 14, SYSTEM INFORMATION BLOCK TYPE 15 and SYSTEM INFORMATION BLOCK TYPE 16 messages are not used.

Contents of ACTIVE SET UPDATE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects one integer between 0 to 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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
Activation time	now
New U-RNTI	Not Present
CN information info	Not Present
Downlink counter synchronisation info	Not Present
Maximum allowed UL TX power	33dBm
Radio link addition information	Not Present
Radio link removal information	Not Present
TX Diversity Mode	None

Information Element	Value/remark
SSDT information	Not Present

Contents of ACTIVE SET UPDATE COMPLETE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink ACTIVE SET UPDATE message
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.
Uplink integrity protection activation info	Not checked
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of ACTIVE SET UPDATE FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the same value used in the corresponding downlink ACTIVE SET UPDATE message
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.
Failure cause	Refer to test requirement

Contents of CELL UPDATE message: TM

Information Element	Value/remark

Message Type	
U-RNTI	Checked to see if it is set to the following values
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Checked to see if it is absent
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.
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
CN domain identity	Checked to see if it is one of the supported CN domains
START	Checked to see if it is present
AM_RLC error indication (RB2 or RB3)	Checked to see if it is set to 'FALSE'
AM_RLC error indication (RB>3)	Checked to see if it is set to 'FALSE'
Cell update cause	See the test content
Failure cause	Checked to see if it is absent
RB timer indicator	
T314 expired	Checked to see if it is set to 'FALSE'
T315 expired	Checked to see if it is set to 'FALSE'
Measured results on RACH	Not checked

Contents of CELL UPDATE CONFIRM message: UM

Information Element	**Value/remark**
Message Type	
U-RNTI	If this message is sent on CCCH, use the following values. Else, this IE is absent.
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Selects an arbitrary integer between 0 to 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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
Activation time	Not Present - use default value
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State indicator	CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
RLC re-establish indicator (RB2 or RB3)	FALSE
RLC re-establish indicator (RB>3)	FALSE
CN information info	Not Present
URA identity	0000 0000 0001B
RB information to release list	Not Present
RB information to reconfigure list	Not Present
RB information to be affected list	Not Present
Downlink counter synchronisation info	Not Present
UL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured TrCH information list	Not Present
CHOICE Mode	FDD
CPCH set ID	Not Present
Added or Reconfigured TrCH information for DRAC list	Not Present
DL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured TrCH information list	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE channel requirement	Not Present
CHOICE mode	FDD
Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present

Downlink information per radio link list	Not Present

Contents of MEASUREMENT CONTROL message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an unused integer between 0 to 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.
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
Measurement Report Transfer Mode	Acknowledged mode RLC
Measurement Reporting/Event Trigger Reporting Mode	Event Trigger
Additional measurement list	Not Present
CHOICE Measurement type	Intra-frequency measurement
Intra-frequency measurement	
Intra-frequency cell info	
- New intra-frequency cell	
Intra-frequency cell id	1
Cell info	
Cell individual offset	0dB
Reference time difference to cell	Not Present
Read SFN number	FALSE
CHOICE mode	FDD
Primary CPICH info	
Primary scrambling code	Different from the Default setting in TS34.108 clause 6.1 (FDD)
Primary CPICH Tx power	Not Present
TX Diversity indicator	FALSE
Intra-frequency measurement quantity	

~~Filter coefficient~~	~~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~~	~~TRUE~~
~~CPICH Ec/N0 reporting indicator~~	~~FALSE~~
~~CPICH RSCP reporting indicator~~	~~TRUE~~
~~Pathloss reporting indicator~~	~~FALSE~~
~~Reporting quantities for monitored cells~~	
~~SFN-SFN observed time difference reporting indicator~~	~~No report~~
~~Cell synchronisation information reporting indicator~~	~~FALSE~~
~~Cell Identity reporting indicator~~	~~TRUE~~
~~CPICH Ec/N0 reporting indicator~~	~~FALSE~~
~~CPICH RSCP reporting indicator~~	~~TRUE~~
~~Pathloss reporting indicator~~	~~FALSE~~
~~Reporting quantities for detected set cells~~	~~Not Present~~
~~Reporting cell status~~	
~~CHOICE reported cell~~	~~Report cell within active set and/or monitored cells on used frequency~~
~~Maximum number of reported cells~~	~~2~~
~~Measurement validity~~	~~Not Present~~
~~CHOICE report criteria~~	~~Periodic reporting criteria~~
~~Amount of reporting~~	~~Infinity~~
~~Reporting interval~~	~~64 sec~~
~~DPCH Compressed mode status info~~	~~Not Present~~

~~Contents of MEASUREMENT CONTROL FAILURE message: AM~~

~~Information Element~~	~~Value/remark~~
~~Message Type~~	
~~RRC transaction identifier~~	~~Checked to see if it's set to the identical value for the same IE in the downlink MEASUREMENT CONTROL~~

	message
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.
Failure cause	See the test content

Contents of MEASUREMENT REPORT message: AM

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	Not present
- 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	Different from the Default setting in TS34.108 clause 6.1 (FDD)
- 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

Contents of PAGING TYPE 1 message: TM (SMS in CS)

Information Element	Value/remark
Message Type	
Paging record list	
Paging record	
CHOICE Used paging identity	CN identity
Paging cause	Terminating Low Priority Signalling
CN domain identity	CS domain
CHOICE UE identity	
IMSI (GSM-MAP)	Set to the same octet string as in the IMSI stored in the TEST USIM card
BCCH modification info	Not Present

Contents of PAGING TYPE 1 message: TM (SMS in PS)

Information Element	Value/remark
Message Type	
Paging record list	
Paging record	
CHOICE Used paging identity	CN identity
Paging cause	Terminating Low Priority Signalling
CN domain identity	PS domain
CHOICE UE identity	
IMSI (GSM-MAP)	Set to the same octet string as in the IMSI stored in the TEST USIM card
BCCH modification info	Not Present

Contents of PAGING TYPE 2 message: AM (Speech in CS)

Information Element	Value/remark
Message Type	
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.
Paging cause	Terminating Conversational Call
CN domain identity	CS domain
Paging record type identifier	Select the same type as in the IE "Initial UE Identity" in RRC CONNECTION REQUEST" message.

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM

Information Element	Condition	Value/remark
Message Type	A1, A2, A3, A4, A5, A6	
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 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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient	A1, A2, A3, A4, A5, A6	Not Present
CN information info		Not Present
URA identity		Not Present
Downlink counter synchronisation info		Not Present
Frequency info		
— UARFCN uplink (Nu)		Reference to clause 5.1 Test frequencies
— UARFCN downlink (Nd)		Reference to clause 5.1 Test frequencies

Information Element	Condition	Value/remark
Maximum allowed UL TX power		33dBm
CHOICE *channel requirement*	A5, A6	Not Present
CHOICE *channel requirement*	A1, A2, A3, A4	Uplink DPCH info
- Uplink DPCH power control info		
DPCCH power offset		-6dB
PC Preamble		1 frame
SRB delay		7 frames
Power Control Algorithm		Algorithm1
TPC step size		1dB
Scrambling code type		Long
Scrambling code number		0 (0 to 16777215)
Number of DPDCH		Not Present(1)
- spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
Number of FBI bit		Reference to TS34.108 clause 6.10 Parameter Set
Puncturing Limit		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Mode	A1, A2, A3, A4, A5, A6	FDD
Downlink PDSCH information		Not Present
Downlink information common for all radio links	A1, A2, A3	
Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
DPC mode		0 (single)
CHOICE mode		FDD
Power offset $P_{Pilot\text{-}DPDCH}$		0
DL rate matching restriction information		Not Present
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Fixed or Flexible Position		Reference to TS34.108 clause 6.10

Information Element	Condition	Value/remark
		Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
DPCH compressed mode info		Not Present
TX Diversity mode		None
SSDT information		Not Present
Default DPCH Offset Value		Not Present
Downlink information common for all radio links	A4	
Downlink DPCH info common for all RL		
Timing indicator		Initialise
CFN-targetSFN frame offset		Not Present
Downlink DPCH power control information		
DPC mode		0 (single)
CHOICE mode		FDD
Power offset P$_{Pilot-DPDCH}$		0
DL rate matching restriction information		Not Present
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
DPCH compressed mode info		Not Present
TX Diversity mode		None
SSDT information		Not Present
Default DPCH Offset Value		Not Present
Downlink information common for all radio links	A5, A6	Not Present
Downlink information for each radio links	A1, A2,A3,A4	
Primary CPICH info		
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present

Information Element	Condition	Value/remark
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		
- Primary CPICH usage for channel estimation		Primary CPICH may be used
DPCH frame offset		0 chips
Power offset $P_{Pilot-DPDCH}$		0
Secondary CPICH info		Not Present
DL channelisation code		
Secondary scrambling code		5
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Code number		0
Scrambling code change		No change
TPC combination index		0
SSDT Cell Identity		Not Present
Closed loop timing adjustment mode		Not Present
SCCPCH information for FACH		Not Present
Downlink information for each radio link	A5	
Choice mode		FDD
Primary CPICH info		
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not Present
SCCPCH Information for FACH		Not Present
Downlink information for each radio link	A6	Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of PHYSICAL CHANNEL RECONFIGURATION COMPLETE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it's set to identical value of the same IE in the downlink PHYSICAL CHANNEL RECONFIGURATION message
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.
Uplink integrity protection activation info	Not checked
CHOICE mode	FDD
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC-TM, (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of PHYSICAL CHANNEL RECONFIGURATION FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink PHYSICAL CHANNEL RECONFIGURATION message.
Integrity check info	The presence if 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.
Failure cause	Checked to see if it meets test requirement

Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Condition	Value/remark
Message Type	A1, A4, A5, A6,A7,A8	
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.
Integrity protection mode info		Not Present
Ciphering mode info		The presence of this IE is dependent on IXIT statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted.
- Ciphering mode command		Start/restart
- Ciphering algorithm		Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH		(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A4,A7,A8	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient	A1, A4, A5, A6,A7,A8	Not Present
CN information info		Not Present
URA identity		Not Present
Signalling RB information to setup		Not Present
RAB information for setup	A1,A7	
- RAB info		

Information Element	Condition	Value/remark
RAB identity		0000 0001B
CN domain identity		CS domain
- NAS Synchronization Indicator		Not Present
Re-establishment timer		useT314
RB information to setup		
RB identity		10
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		TM RLC
Transmission RLC discard		Not Present
- Segmentation indication		FALSE
CHOICE Downlink RLC mode		TM RLC
Segmentation indication		FALSE
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		1
- Logical channel identity		Not Present
CHOICE RLC size list		Configured
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		6
DL DSCH Transport channel identity		Not Present
Logical channel identity		Not Present
RAB information for setup	A8	
RAB info		
RAB identity		0000 0001B
CN domain identity		CS domain

Information Element	Condition	Value/remark
NAS Synchronization Indicator		Not Present
Re-establishment timer		useT314
RB information to setup		
RB identity		10
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		TM RLC
Transmission RLC discard		Not Present
Segmentation indication		FALSE
CHOICE Downlink RLC mode		TM RLC
Segmentation indication		FALSE
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		1
Logical channel identity		Not Present
CHOICE RLC size list		Configured
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		6
DL DSCH Transport channel identity		Not Present
Logical channel identity		Not Present
RB identity		11
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		TM RLC
Transmission RLC discard		Not Present
Segmentation indication		FALSE
CHOICE Downlink RLC mode		TM RLC

Information Element	Condition	Value/remark
Segmentation indication		FALSE
RB mapping info		
- Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		2
Logical channel identity		Not Present
CHOICE RLC size list		Configured
MAC logical channel priority		1
Downlink RLC logical channel info		
- Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		7
DL DSCH Transport channel identity		Not Present
Logical channel identity		Not Present
RB identity		12
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		TM RLC
- Transmission RLC discard		Not Present
Segmentation indication		FALSE
CHOICE Downlink RLC mode		TM RLC
Segmentation indication		FALSE
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		3
- Logical channel identity		Not Present
CHOICE RLC size list		Configured
MAC logical channel priority		1

Information Element	Condition	Value/remark
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		8
DL DSCH Transport channel identity		Not Present
Logical channel identity		Not Present
RAB information for setup	A4, A5, A6	
RAB info		(AM DTCH for PS domain)
RAB identity		0000 0101B
CN domain identity		PS domain
NAS Synchronization Indicator		Not Present
Re-establishment timer		useT314
RB information to setup		
RB identity		20
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		AM RLC
Transmission RLC discard		
CHOICE SDU discard mode		Max DAT retransmissions
MAX_DAT		4
Timer_MRW		100
MaxMRW		4
Transmission window size		8
Timer_RST		500
Max_RST		4
Polling info		
Timer_poll_prohibit		200
Timer_poll		200
Poll_SDU		1
Last transmission PDU poll		TRUE
Last retransmission PDU poll		TRUE
Poll_Windows		99

Information Element	Condition	Value/remark
CHOICE Downlink RLC mode		AM RLC
In sequence delivery		TRUE
Receiving window size		8
Downlink RLC status info		
Timer_status_prohibit		200
Timer_EPC		200
Missing PDU indicator		TRUE
RB mapping info		
Information for each multiplexing option		2 RBMuxOptions
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		1
Logical channel identity		Not Present
CHOICE RLC size list		Configured
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		6
DL DSCH Transport channel identity		Not Present
Logical channel identity		Not Present
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		RACH
UL Transport channel identity		Not Present
Logical channel identity		7
CHOICE RLC size list		Explicit list
RLC size index		Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority		6
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		FACH

Information Element	Condition	Value/remark
DL DCH Transport channel identity		Not Present
DL DSCH Transport channel identity		Not Present
- Logical channel identity		7
RB information to be affected	A1, A4, A5, A6,A7,A8	Not Present
Downlink counter synchronisation info	A1, A4, A5, A6,A7,A8	Not Present
UL Transport channel information for all transport channels	A1,A4,A7,A8	
PRACH TFCS		Not Present
CHOICE mode		FDD
- TFC subset		Not Present
UL DCH TFCS		
CHOICE TFCI signalling		Normal
TFCI Field 1 information		
CHOICE TFCS representation		Complete reconfiguration
TFCS complete reconfigure information		
CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10 Parameter Set.
- CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10 Parameter Set
CTFC		Reference to TS34.108 clause 6.10 Parameter Set
Power offset information		
CHOICE Gain Factors		Computed Gain Factors(The last TFC is set to Signalled Gain Factors)
Gain factor βc		11 (below 64 kbps)
		9 (higher than 64 kbps) (Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
Gain factor βd		15
		(Not Present if the CHOICE Gain Factors is set to Computed Gain Factors)
Reference TFC ID		0
CHOICE mode		FDD

Information Element	Condition	Value/remark
Power offset P $_{p-m}$		Not Present
UL Transport channel information for all transport channels	A5, A6	Not Present
- PRACH TFCS		
CHOICE mode		
TFC subset		
UL DCH TFCS		
Deleted UL TrCH information	A1, A4, A5, A6,A7,A8	Not Present
Added or Reconfigured UL TrCH information	A1	
Uplink transport channel type		DCH
UL Transport channel identity		1
-TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
- CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Added or Reconfigured UL TrCH information	A4,A7	2 TrCHs(DCH for DCCH and DCH for DTCH)
Uplink transport channel type		DCH
UL Transport channel identity		5

Information Element	Condition	Value/remark
TFS		
CHOICE Transport channel type		Dedicated transport channels
- Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
- Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
- RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
- Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
~~Coding Rate~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Added or Reconfigured UL TrCH information~~	~~A8~~	~~4 TrCHs(DCH for DCCH and 3DCHs for DTCH)~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~
~~TFS~~		
~~CHOICE Transport channel type~~		~~Dedicated transport channels~~
~~Dynamic Transport format information~~		
~~RLC Size~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Number of TBs and TTI List~~		~~(This IE is repeated for TFI number.)~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of Transport blocks~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CHOICE Logical Channel list~~		~~All~~
~~Semi-static Transport Format information~~		
~~Transmission time interval~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Type of channel coding~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Coding Rate~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~1~~
~~TFS~~		
~~CHOICE Transport channel type~~		~~Dedicated transport channels~~
~~Dynamic Transport format information~~		
~~RLC Size~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~

Information Element	Condition	Value/remark
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Uplink transport channel type		DCH
UL Transport channel identity		2
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set

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Information Element	Condition	Value/remark
Uplink transport channel type		DCH
UL Transport channel identity		3
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE mode		FDD
CPCH set ID		Not Present
Added or Reconfigured TrCH information for DRAC list		Not Present
Added or Reconfigured UL TrCH information	A5, A6	Not Present
CHOICE mode	A1, A4, A5, A6,A7,A8	FDD
CPCH set ID		Not Present
Added or Reconfigured TrCH information for DRAC list		Not Present
DL Transport channel information common for all transport channel	A1,A7,A8	
SCCPCH TFCS		Not Present

Information Element	Condition	Value/remark
— CHOICE mode		FDD
— CHOICE DL parameters		SameasUL
DL Transport channel information common for all transport channel	A4	
— SCCPCH TFCS		Not Present
— CHOICE mode		FDD
— CHOICE DL parameters		Explicit
— DL DCH TFCS		
— CHOICE TFCI Signalling		Normal
— TFCI Field 1 Information		
— CHOICE TFCS representation		Complete reconfiguration
— TFCS complete reconfigure		
— CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from clause TS34.108 clause 6.10 Parameter Set.
— CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10
— CTFC		Reference to TS34.108 clause 6.10 Parameter Set
— Power offset information		Not Present
DL Transport channel information common for all transport channel	A5, A6	Not Present
— SCCPCH TFCS		
— CHOICE mode		
— CHOICE DL parameters		
Deleted DL TrCH information	A1, A4, A5, A6,A7,A8	Not Present
Added or Reconfigured DL TrCH information	A1	
— Downlink transport channel type		DCH
— DL Transport channel identity		6
— CHOICE DL parameters		Same as UL
— Uplink transport channel type		DCH
— UL TrCH identity		1
— DCH quality target		
— BLER Quality value		-6.3
— Transparent mode signalling info		Not Present

Information Element	Condition	Value/remark
Added or Reconfigured DL TrCH information	A4,A7	2 TrCHs(DCH for DCCH and DCH for DTCH)
- Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH identity		5
DCH quality target		
BLER Quality value		Not Present
Transparent mode signalling info		Not Present
Downlink transport channel type		DCH
- DL Transport channel identity		6
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		
- Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
- Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present

Information Element	Condition	Value/remark
Added or Reconfigured DL TrCH information	A8	4 TrCHs(DCH for DCCH and 3DCHs for DTCH)
- Downlink transport channel type		DCH
- DL Transport channel identity		10
- CHOICE DL parameters		Same as UL
- Uplink transport channel type		DCH
- UL TrCH identity		5
- DCH quality target		
- BLER Quality value		Not Present
- Transparent mode signalling info		Not Present
- Downlink transport channel type		DCH
- DL Transport channel identity		6
- CHOICE DL parameters		Explicit
- TFS		
- CHOICE Transport channel type		Dedicated transport channel
- Dynamic transport format information		
- RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
- Number of TBs and TTI List		(This IE is repeated for TFI number.)
- Dynamic transport format information		
- Transmission Time Interval		Not Present
- Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
- Semi-static Transport Format information		
- Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
- Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
- Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
- Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
- CRC size		Reference to TS34.108 clause 6.10 Parameter Set
- DCH quality target		
- BLER Quality value		-6.3
- Transparent mode signalling info		Not Present

Information Element	Condition	Value/remark
Downlink transport channel type		DCH
DL Transport channel identity		7
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		Not Present
Transparent mode signalling info		Not Present
Downlink transport channel type		DCH
DL Transport channel identity		8
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		

Information Element	Condition	Value/remark
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		Not Present
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A5, A6	Not Present
Frequency info	A1, A4, A5, A6	
UARFCN uplink (Nu)		Reference to clause 5.1 Test frequencies
UARFCN downlink (Nd)		Reference to clause 5.1 Test frequencies
Maximum allowed UL TX power	A1, A4, A5, A6, A7, A8	33dBm
CHOICE channel requirement	A1, A4, A7, A8	Uplink DPCH info
Uplink DPCH power control info		
DPCCH power offset		-6dB
PC Preamble		1 frame
SRB delay		7 frames
Power Control Algorithm		Algorithm1
TPC step size		1dB
Scrambling code type		Long
Scrambling code number		0 (0 to 16777215)
Number of DPDCH		Not Present(1)
spreading factor		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
~~TFCI existence~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Number of FBI bit~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Puncturing Limit~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CHOICE channel requirement~~	~~A5,A6~~	~~Not Present~~
~~CHOICE Mode~~	~~A1, A4, A5, A6,A7,A8~~	~~FDD~~
~~Downlink PDSCH information~~		~~Not Present~~
~~Downlink information common for all radio links~~	~~A1, A4,A7,A8~~	
~~Downlink DPCH info common for all RL~~		
~~Timing indicator~~		~~Maintain~~
~~CFN targetSFN frame offset~~		~~Not Present~~
~~Downlink DPCH power control information~~		
~~DPC mode~~		~~0 (single)~~
~~CHOICE mode~~		~~FDD~~
~~- Power offset P~~$_{Pilot-DPDCH}$		~~0~~
~~DL rate matching restriction information~~		~~Not Present~~
~~Spreading factor~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~Fixed or Flexible Position~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~TFCI existence~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CHOICE SF~~		~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~CHOICE mode~~		~~FDD~~
~~DPCH compressed mode info~~		~~Not Present~~
~~TX Diversity mode~~		~~None~~
~~SSDT information~~		~~Not Present~~
~~Default DPCH Offset Value~~		~~Not Present~~
~~Downlink information common for all radio links~~	~~A5,A6~~	~~Not Present~~
~~Downlink information for each radio link list~~	~~A1,A4,A7,A8~~	
~~Downlink information for each radio link~~		

Information Element	Condition	Value/remark
Choice mode		FDD
Primary CPICH info		
- Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		
Primary CPICH usage for channel estimation		Primary CPICH may be used
DPCH frame offset		0 chips
Secondary CPICH info		Not Present
- DL channelisation code		
Secondary scrambling code		1
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Code number		0
Scrambling code change		No change
TPC combination index		0
SSDT Cell Identity		Not Present
Closed loop timing adjustment mode		Not Present
- SCCPCH information for FACH		Not Present
Downlink information for each radio link list	A5	
Downlink information for each radio link		
Choice mode		FDD
Primary CPICH info		
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not present
SCCPCH information for FACH		Not Present
Downlink information for each radio link list	A6	
Downlink information for each radio link		
Choice mode		FDD

Information Element	Condition	Value/remark
Primary CPICH info		
Primary scrambling code		Different from the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not present
SCCPCH information for FACH		Not Present

Condition	Explanation
A1	This IE need for "Non speech from CELL_DCH to CELL_DCH in CS"
A2 is defined in TS34.108 clause 9.	This IE need for "Speech from CELL_DCH to CELL_DCH in CS"
A3 is defined in TS34.108 clause 9.	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"
A7	This IE need for "Non speech from CELL_FACH to CELL_DCH in CS"
A8	This IE need for "Speech from CELL_FACH to CELL_DCH in CS"

Contents of RADIO BEARER SETUP FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink RADIO BEARER SETUP message.
Integrity check info	The presence if 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.
Failure cause	Checked to see if it meets test requirement
Radio bearers for which reconfiguration would have succeeded	Not checked

Contents of RADIO BEARER RECONFIGURATION message: AM or UM

Information Element	Condition	Value/remark
Message Type	A1,A2,A3, A4,A5,A6	
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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient	A1,A2,A3, A4,A5,A6	Not Present
CN information info		Not Present
URA identity		Not Present
RAB information to reconfigure list		Not Present
RB information to reconfigure list	A1	TS25.331 specifies that "Although this IE is not always required, need is MP to align with ASN.1".
RB information to reconfigure		(UM DCCH for RRC)
RB identity		1
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for RRC)
RB identity		2

~~Information Element~~	~~Condition~~	~~Value/remark~~
~~PDCP info~~		~~Not Present~~
~~PDCP SN info~~		~~Not Present~~
~~RLC info~~		~~Not Present~~
~~RB mapping info~~		~~Not Present~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure~~		~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~		~~3~~
~~PDCP info~~		~~Not Present~~
~~PDCP SN info~~		~~Not Present~~
~~RLC info~~		~~Not Present~~
~~RB mapping info~~		~~Not Present~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure~~		~~(AM DCCH for NAS_DT Low priority)~~
~~RB identity~~		~~4~~
~~PDCP info~~		~~Not Present~~
~~PDCP SN info~~		~~Not Present~~
~~RLC info~~		~~Not Present~~
~~RB mapping info~~		~~Not Present~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure~~		~~(TM DTCH)~~
~~RB identity~~		~~10~~
~~PDCP info~~		~~Not Present~~
~~PDCP SN info~~		~~Not Present~~
~~RLC info~~		~~Not Present~~
~~RB mapping info~~		~~Not Present~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure list~~	~~A2~~	~~TS25.331 specifies that "Although this IE is not always required, need is MP to align with ASN.1".~~
~~RB information to reconfigure~~		~~(UM DCCH for RRC)~~
~~RB identity~~		~~1~~
~~PDCP info~~		~~Not Present~~
~~PDCP SN info~~		~~Not Present~~
~~RLC info~~		~~Not Present~~

Information Element	Condition	Value/remark
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for RRC)
RB identity		2
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for NAS_DT High priority)
RB identity		3
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for NAS_DT Low priority)
RB identity		4
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(TM DTCH)
RB identity		10
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(TM DTCH)
RB identity		11
PDCP info		Not Present

Information Element	Condition	Value/remark
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(TM DTCH)
		(This IE is needed for 12.2 kbps and 10.2 kbps)
RB identity		12
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure list	A3,A4,A5,A6	TS25.331 specifies that "Although this IE is not always required, need is MP to align with ASN.1".
RB information to reconfigure		(UM DCCH for RRC)
RB identity		1
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for RRC)
RB identity		2
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present
RB mapping info		Not Present
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for NAS_DT High priority)
RB identity		3
PDCP info		Not Present
PDCP SN info		Not Present
RLC info		Not Present

Information Element	Condition	Value/remark
— RB mapping info		Not Present
— RB stop/continue		Not Present
— RB information to reconfigure		(AM DCCH for NAS_DT Low priority)
— RB identity		4
— PDCP info		Not Present
— PDCP SN info		Not Present
— RLC info		Not Present
— RB mapping info		Not Present
— RB stop/continue		Not Present
— RB information to reconfigure		(AM DTCH)
— RB identity		20
— PDCP info		Not Present
— PDCP SN info		Not Present
— RLC info		Not Present
— RB mapping info		Not Present
— RB stop/continue		Not Present
RB information to be affected	A1, A2, A3,A4,A5, A6	Not Present
UL Transport channel information for all transport channels	A1, A2, A5,A6	Not Present
UL Transport channel information for all transport channels	A3, A4	
— PRACH TFCS		Not Present
— CHOICE mode		FDD
— TFC subset		Not Present
— UL DCH TFCS		
— CHOICE TFCI signalling		Normal
— TFCI Field 1 information		
— CHOICE TFCS representation		Complete reconfiguration
— TFCS complete reconfigure information		
— CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10 Parameter Set.
— CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10 Parameter

Information Element	Condition	Value/remark
		Set
CTFC		Reference to TS34.108 clause 6.10 Parameter Set
Power offset information		
CHOICE Gain Factors		Computed Gain Factors(The last TFC is set to Signalled Gain Factors)
Gain factor βc		11 (below 64 kbps)
		9 (higher than 64 kbps)
		(Not Present if the CHOICE Gain Factors is set to ComputedGain Factors)
Gain factor βd		15
		(Not Present if the CHOICE Gain Factors is set to ComputedGain Factors)
Reference TFC ID		0
CHOICE mode		FDD
Power offset P p-m		Not Present
Deleted UL TrCH information	A1, A2, A3, A4, A5,A6	Not Present
Added or Reconfigured UL TrCH information	A1, A2, A5,A6	Not Present
Added or Reconfigured UL TrCH information	A4	2 TrCHs(DCH for DCCH and DCH for DTCH)
Uplink transport channel type		DCH
UL Transport channel identity		5
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Added or Reconfigured UL TrCH information	A3	(DCH for DTCH)
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter

Information Element	Condition	Value/remark
		Set
- Number of TBs and TTI List		(This IE is repeated for TFI number.)
- Transmission Time Interval		Not Present
- Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list		All
- Semi-static Transport Format information		
- Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
- Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
- Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
- Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
- CRC size		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE mode	A1,A2,A3, A4,A5,A6	FDD
- CPCH set ID		Not Present
- Added or Reconfigured TrCH information for DRAC list		Not Present
DL Transport channel information common for all transport channel	A1, A2, A5, A6	Not Present
DL Transport channel information common for all transport channel	A3,A4	
- SCCPCH TFCS		Not Present
- CHOICE mode		FDD
- CHOICE DL parameters		Explicit
- DL DCH TFCS		
- CHOICE TFCI Signalling		Normal
- TFCI Field 1 Information		
- CHOICE TFCS representation		Complete reconfiguration
- TFCS complete reconfigure		
- CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from clause TS34.108 clause 6.10 Parameter Set.
- CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10

Information Element	Condition	Value/remark
CTFC		Reference to TS34.108 clause 6.10 Parameter Set
- Power offset information		Not Present
Deleted DL TrCH information	A1, A2, A3, A4, A5,A6	Not Present
Added or Reconfigured DL TrCH information	A1, A2, A5, A6	Not Present
Added or Reconfigured DL TrCH information	A4	2 TrCHs(DCH for DCCH and DCH for DTCH)
- Downlink transport channel type		DCH
- DL Transport channel identity		10
- CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH identity		5
- DCH quality target		
BLER Quality value		Not Present
- Transparent mode signalling info		Not Present
- Downlink transport channel type		DCH
- DL Transport channel identity		6
- CHOICE DL parameters		Explicit
- TFS		
CHOICE Transport channel type		Dedicated transport channel
- Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
- Dynamic transport format information		
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A3	
Downlink transport channel type		DCH
DL Transport channel identity		6
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Frequency info	A1,A2,A3, A4,A5,A6	
UARFCN uplink (Nu)		Reference to clause 5.1 Test frequencies

Information Element	Condition	Value/remark
UARFCN downlink (Nd)		Reference to clause 5.1 Test frequencies
Maximum allowed UL TX power	A1,A2,A3, A4,A5,A6	33dBm
CHOICE channel requirement	A1, A2, A3, A4	Uplink DPCH info
Uplink DPCH power control info		
DPCCH power offset		-6dB
PC Preamble		1 frame
SRB delay		7 frames
Power Control Algorithm		Algorithm1
TPC step size		1dB
Scrambling code type		Long
Scrambling code number		0 (0 to 16777215)
Number of DPDCH		Not Present(1)
spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
Number of FBI bit		Reference to TS34.108 clause 6.10 Parameter Set
Puncturing Limit		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE channel requirement	A5, A6	Not Present
CHOICE Mode	A1,A2,A3, A4,A5,A6	FDD
Downlink PDSCH information		Not Present
Downlink information common for all radio links	A5, A6	Not Present
Downlink information common for all radio links	A1, A2, A3	
Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
DPC mode		0 (single)
CHOICE mode		FDD
Power offset $P_{Pilot\text{-}DPDCH}$		0
DL rate matching restriction information		Not Present

Information Element	Condition	Value/remark
———— Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
———— Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set
———— TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
———— CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
———— DPCH compressed mode info		Not Present
———— TX Diversity mode		None
———— SSDT information		Not Present
———— Default DPCH Offset Value		Not Present
Downlink information common for all radio links	A4	
———— Downlink DPCH info common for all RL		
———— Timing indicator		Initialise
———— CFN-targetSFN frame offset		Not Present
———— Downlink DPCH power control information		
———— DPC mode		0 (single)
———— CHOICE mode		FDD
———— Power offset $P_{Pilot-DPDCH}$		0
———— DL rate matching restriction information		Not Present
———— Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
———— Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set
———— TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
———— CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
———— DPCH compressed mode info		Not Present
———— TX Diversity mode		None
———— SSDT information		Not Present
———— Default DPCH Offset Value		Not Present
Downlink information per radio link list	A1, A2, A3, A4	
———— Downlink information for each radio link		
———— Choice mode		FDD

Information Element	Condition	Value/remark
— Primary CPICH info		
— Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
— PDSCH with SHO DCH info		Not Present
— PDSCH code mapping		Not Present
— Downlink DPCH info for each RL		
— Primary CPICH usage for channel estimation		Primary CPICH may be used
— DPCH frame offset		0 chips
— Secondary CPICH info		Not Present
— Secondary scrambling code		
— channelisation code		
— DL channelisation code		
— Secondary scrambling code		2
— Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
— Code number		0
— Scrambling code change		No change
— TPC combination index		0
— SSDT Cell Identity		Not Present
— Closed loop timing adjustment mode		Not Present
— SCCPCH information for FACH		Not Present
— Downlink information for each radio link	A5	
— Choice mode		FDD
— Primary CPICH info		
— Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
— PDSCH with SHO DCH info		Not Present
— PDSCH code mapping		Not Present
— Downlink DPCH info for each RL		Not present
— SCCPCH Information for FACH		Not Present
— Downlink information for each radio link	A6	
— Choice mode		FDD
— Primary CPICH info		
— Primary scrambling code		Different from the Default setting in TS34.108 clause 6.1 (FDD)

Information Element	Condition	Value/remark
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not Present
Secondary CCPCH info		Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

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Contents of RADIO BEARER RECONFIGURATION FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink RADIO BEARER RECONFIGURATION message.
Integrity check info	The presence if 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.
Failure cause	Checked to see if it meets test requirement
Radio bearers for which reconfiguration would have succeeded List	Not checked

Contents of RADIO BEARER RECONFIGURATION COMPLETE message: AM

Information Element	Value/remark
Message Type	

RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink RADIO BEARER RECONFIGURATION COMPLETE message
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.
Uplink integrity protection activation info	Not checked
CHOICE mode	FDD
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC TM and (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of RADIO BEARER RELEASE message: AM or UM

Information Element		Value/remark
Message Type	A1,A2,A3,A4, A5,A6	
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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present

Information Element		Value/remark
RRC State indicator	A1,A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient	A1,A2,A3,A4, A5,A6	Not Present
CN information info		Not Present
Signalling Connection release indication		Not Present
URA identity		Not Present
RAB information to reconfigure list		Not Present
RB information to release — RB identity	A1,A2	 10
RB information to release — RB identity	A2	 11
RB information to release — RB identity	A2	 12
RB information to release — RB identity	A3, A4, A5, A6	 20
RB information to be affected	A1,A2, A3,A4,A5, A6	Not Present
Downlink counter synchronisation info	A1,A2,A3,A4, A5,A6	Not Present
UL Transport channel information for all transport channels	A1, A2, A3, A4	TFCS reconfigured to fit the new transport channel configuration.
UL Transport channel information for all transport channels	A5, A6	Not Present
Deleted UL TrCH Information - Uplink transport channel type — Transport channel identity	A1,A2, A3, A4	 DCH 1
Deleted UL TrCH Information — Uplink transport channel type — Transport channel identity	A2	 DCH 2
Deleted UL TrCH Information - Uplink transport channel type — Transport channel identity	A2	 DCH 3
Deleted UL TrCH Information	A5,A6	Not Present
Added or Reconfigured UL TrCH information	A1,A2, A3,A4 A5, A6	Not Present

Information Element		Value/remark
DL Transport channel information for all transport channels	A1, A2, A3, A4,	TFCS reconfigured to fit the new transport channel configuration.
DL Transport channel information for all transport channels	A5, A6	Not Present
Deleted DL TrCH Information	A1,A2, A3,A4	
Downlink transport channel type		DCH
Transport channel identity		6
Deleted DL TrCH Information	A2	
Downlink transport channel type		DCH
Transport channel identity		7
Deleted DL TrCH Information	A2	
Downlink transport channel type		DCH
Transport channel identity		8
Deleted DL TrCH Information	A5,A6	Not Present
Added or Reconfigured DL TrCH information	A1,A2, A3, A4,A5, A6	Not Present
Frequency info	A1,A2,A3,A4, A5,A6	
UARFCN uplink (Nu)		Reference to clause 5.1 Test frequencies
UARFCN downlink (Nd)		Reference to clause 5.1 Test frequencies
Maximum allowed UL TX power		33dBm
CHOICE *channel requirement*	A5, A6	Not Present
CHOICE channel requirement	A1,A2,A3,A4	Uplink DPCH info
Uplink DPCH power control info		
DPCCH power offset		-6dB
PC Preamble		1 frame
SRB delay		7 frames
Power Control Algorithm		Algorithm1
TPC step size		1dB
Scrambling code type		Long
Scrambling code number		0 (0 to 16777215)
Number of DPDCH		Not Present(1)
spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set

Information Element		Value/remark
- Number of FBI bit		Reference to TS34.108 clause 6.10 Parameter Set
- Puncturing Limit		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Mode	A1,A2,A3,A4, A5,A6	FDD
- Downlink PDSCH information		Not Present
Downlink information common for all radio links	A5, A6	Not Present
Downlink information common for all radio links	A1,A2, A3, A4	
- Downlink DPCH info common for all RL		
- Timing indicator		Maintain
- CFN targetSFN frame offset		Not Present
- Downlink DPCH power control information		
- DPC mode		0 (single)
- CHOICE mode		FDD
- Power offset P$_{Pilot-DPDCH}$		0
- DL rate matching restriction information		Not Present
- Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info		Not Present
- TX Diversity mode		None
- SSDT information		Not Present
- Default DPCH Offset Value		Not Present
Downlink information for each radio link list	A1,A2,A3,A4	
- Downlink information for each radio link		
- Choice mode		FDD
- Primary CPICH info		
- Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
- PDSCH with SHO DCH info		Not Present
- PDSCH code mapping		Not Present

Information Element		Value/remark
Downlink DPCH info for each RL		
Primary CPICH usage for channel estimation		Primary CPICH may be used
DPCH frame offset		0 chips
Secondary CPICH info		Not Present
Secondary scrambling code		
channelisation code		
DL channelisation code		
Secondary scrambling code		3
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Code number		0
Scrambling code change		No change
TPC combination index		0
SSDT Cell Identity		Not Present
Closed loop timing adjustment mode		Not Present
SCCPCH information for FACH		Not Present
Downlink information for each radio link	A5	
Choice mode		FDD
Primary CPICH info		
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not present
SCCPCH information for FACH		Not Present
Downlink information for each radio link	A6	Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of RADIO BEARER RELEASE FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink RADIO BEARER RELEASE message.
Integrity check info	The presence if 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.
Failure cause	Checked to see if it meets test requirement
Radio bearers for which reconfiguration would have succeeded	Not checked

Contents of UTRAN MOBILITY INFORMATION message: AM or UM

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 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.
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
New U-RNTI	See the test content
New C-RNTI	See the test content
UE Timers and constants in connected mode	
T301	2000 milliseconds
N301	2
T302	4000 milliseconds
N302	3

T304	1000 milliseconds
N304	3
T305	60 minutes
T307	50 seconds
T308	320 milliseconds
T309	8 seconds
T310	320 milliseconds
N310	5
T311	500 milliseconds
T312	5 seconds
N312	200
T313	10 seconds
N313	200
T314	20 seconds
T315	30 seconds
N315	200
T316	50 seconds
T317	1800 seconds
CN information info	Not Present
URA identity	Not present
Downlink counter synchronisation info	Not Present

Contents of UTRAN MOBILITY INFORMATION CONFIRM message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the value of the same IE in downlink UTRAN MOBILITY INFORMATION message
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.
Uplink integrity protection activation info	Not checked

COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC TM, (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of RRC CONNECTION REJECT message: UM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Initial UE identity	Select the same type as in the IE "Initial UE Identity" in RRC CONNECTION REQUEST" message.
Rejection cause	Unspecified
Wait Time	0
Redirection info	Not Present

Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_FACH)

Information Element	Value/remark
Message Type	
Initial UE identity	Select the same identity as in the IE "Initial UE Identity" in received RRC CONNECTION REQUEST" message
RRC transaction identifier	0
Activation time	Not Present (Now)
New U-RNTI	
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
New C-RNTI	0000 0000 0000 0001B
RRC state indicator	CELL_FACH
UTRAN DRX cycle length coefficient	9
Capability update requirement	Not Present
Signalling RB information to setup	(UM DCCH for RRC)
RB identity	1
CHOICE RLC info type	RLC info
CHOICE Uplink RLC mode	UM RLC
Transmission RLC discard	

Information Element	Value/remark
SDU discard mode	Timer based no explicit
Timer discard	50
CHOICE Downlink RLC mode	UM RLC
RB mapping info	
Information for each multiplexing option	2 RBMuxOptions
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	DCH
UL Transport channel identity	5
Logical channel identity	1
CHOICE RLC size list	Configured
MAC logical channel priority	1
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	DCH
DL DCH Transport channel identity	10
DL DSCH Transport channel identity	Not Present
Logical channel identity	1
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
UL Transport channel identity	Not Present
Logical channel identity	1
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	2
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
DL DCH Transport channel identity	Not Present
DL DSCH Transport channel identity	Not Present
Logical channel identity	1
Signalling RB information to setup	(AM DCCH for RRC)

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Information Element	Value/remark
RB identity	2
CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
Transmission RLC discard	
SDU discard mode	Max DAT retransmissions
MAX_DAT	4
Timer_MRW	100
MaxMRW	4
Transmission window size	8
Timer_RST	500
Max_RST	4
Polling info	
Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
CHOICE Downlink RLC mode	AM RLC
In-sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	
Timer_status_prohibit	200
Timer_EPC	200
Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	2 RBMuxOptions
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	DCH
UL Transport channel identity	5
Logical channel identity	2
CHOICE RLC size list	Configured

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Information Element	Value/remark
MAC logical channel priority	2
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	DCH
DL DCH Transport channel identity	10
DL DSCH Transport channel identity	Not Present
Logical channel identity	2
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
UL Transport channel identity	Not Present
Logical channel identity	2
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	3
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
DL DCH Transport channel identity	Not Present
DL DSCH Transport channel identity	Not Present
Logical channel identity	2
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
RB identity	3
CHOICE RLC info type	RLC info
CHOICE Uplink RLC mode	AM RLC
Transmission RLC discard	
SDU discard mode	Max DAT retransmissions
MAX_DAT	4
Timer_MRW	100
MaxMRW	4
Transmission window size	8
Timer_RST	500
Max_RST	4

Information Element	Value/remark
Polling info	
Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
CHOICE Downlink RLC mode	AM RLC
In sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	
Timer_status_prohibit	200
Timer_EPC	200
Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	2 RBMuxOptions
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	DCH
UL Transport channel identity	5
Logical channel identity	3
CHOICE RLC size list	Configured
MAC logical channel priority	3
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	DCH
DL DCH Transport channel identity	10
DL DSCH Transport channel identity	Not Present
Logical channel identity	3
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
UL DCH Transport channel identity	Not Present

Information Element	Value/remark
Logical channel identity	3
CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	4
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
DL DCH Transport channel identity	Not Present
DL DSCH Transport channel identity	Not Present
Logical channel identity	3
Signalling RB information to setup	(AM DCCH for NAS_DT Low priority)
RB identity	4
CHOICE RLC info type	RLC info
CHOICE Uplink RLC mode	AM RLC
Transmission RLC discard	
SDU discard mode	Max DAT retransmissions
MAX_DAT	4
Timer_MRW	100
MaxMRW	4
Transmission window size	8
Timer_RST	500
Max_RST	4
Polling info	
Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
CHOICE Downlink RLC mode	AM RLC
In-sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	

Information Element	Value/remark
Timer_status_prohibit	200
Timer_EPC	200
- Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	2 RBMuxOptions
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	DCH
UL Transport channel identity	5
Logical channel identity	4
CHOICE RLC size list	Configured
- MAC logical channel priority	4
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	DCH
DL DCH Transport channel identity	10
DL DSCH Transport channel identity	Not Present
Logical channel identity	4
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
UL Transport channel identity	Not Present
Logical channel identity	4
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	5
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
DL DCH Transport channel identity	Not Present
- DL DSCH Transport channel identity	Not Present
Logical channel identity	4
UL Transport channel information for all transport channels	Not Present

Information Element	Value/remark
Added or Reconfigured TrCH information list	TS 25.331 specifies that "Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1"
Added or Reconfigured UL TrCH information	
Uplink transport channel type	DCH
UL Transport channel identity	5
TFS	
CHOICE Transport channel type	Delicated transport channels
Dynamic Transport format information	
RLC Size	Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List	(This IE is repeated for TFI number.)
Transmission Time Interval	Not Present
Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel List	ALL
Semi-static Transport Format information	
Transmission time interval	Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding	Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate	Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute	Reference to TS34.108 clause 6.10 Parameter Set
CRC size	Reference to TS34.108 clause 6.10 Parameter Set
DL Transport channel information common for all transport channel	Not Present(Refer to SIB type 5)
Added or Reconfigured TrCH information list	TS 25.331 specifies that "Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1"
Added or Reconfigured DL TrCH information	
Downlink transport channel type	DCH
DL Transport channel identity	10
CHOICE DL parameters	Same as UL
Uplink Transport channel type	DCH
UL TrCH identity	5
DCH quality target	Not Present
Transparent mode signalling info	Not Present
Frequency info	
UARFCN uplink (Nu)	Reference to clause 5.1 Test frequencies

Information Element	Value/remark
UARFCN downlink (Nd)	Reference to clause 5.1 Test frequencies
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio link list	
Downlink information for each radio link	
Choice mode	FDD
Primary CPICH info	
Primary scrambling code	Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info	Not Present
PDSCH code mapping	Not Present
Downlink DPCH info for each RL	Not present
SCCPCH information for FACH	Not Present

Contents of RRC STATUS message: AM

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.
Identification of received message	Not Checked
Protocol error information	
Protocol error cause	Refer to test requirement.

Contents of SECURITY MODE FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is the identical to the same IE in the downlink SECURITY MODE COMMAND

Information Element	Condition	Value/remark
UL Transport channel information for all transport channels	A1, A2, A5, A6	Not Present
UL Transport channel information for all transport channels	A3, A4	
- PRACH TFCS		Not Present
- CHOICE mode		FDD
- TFC subset		Not Present
- UL DCH TFCS		
- CHOICE TFCI signalling		Normal
- TFCI Field 1 information		
- CHOICE TFCS representation		Complete reconfiguration
- TFCS complete reconfigure information		
- CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from TS34.108 clause 6.10 Parameter Set.
- CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10 Parameter Set
- CTFC		Reference to TS34.108 clause 6.10 Parameter Set
- Power offset information		
- CHOICE Gain Factors		Computed Gain Factors(The last TFC is set to Signalled Gain Factors)
- Gain factor βc		11 (below 64 kbps) 9 (higher than 64 kbps) (Not Present if the CHOICE Gain Factors is set to ComputedGain Factors)
- Gain factor βd		15 (Not Present if the CHOICE Gain Factors is set to ComputedGain Factors)
- Reference TFC ID		0
- CHOICE mode		FDD
- Power offset P p-m		Not Present
Added or Reconfigured UL TrCH information	A1, A2, A5, A6	Not Present
Added or Reconfigured UL TrCH information	A4	2 TrCHs(DCH for DCCH and DCH for DTCH)
- Uplink transport channel type		DCH
- UL Transport channel identity		5

Information Element	Condition	Value/remark
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
Added or Reconfigured UL TrCH information	A3	(DCH for DTCH)
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Logical Channel list		All
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE *mode*	A1,A2,A3, A4,A5,A6	FDD
CPCH set ID		Not Present
Added or Reconfigured TrCH information for DRAC list		Not Present
DL Transport channel information common for all transport channel	A1, A2, A5,A6	Not Present
DL Transport channel information common for all transport channel	A3,A4	

Information Element	Condition	Value/remark
SCCPCH TFCS		Not Present
CHOICE mode		FDD
-CHOICE DL parameters		Explicit
DL DCH TFCS		
CHOICE TFCI Signalling		Normal
TFCI Field 1 Information		
CHOICE TFCS representation		Complete reconfiguration
TFCS complete reconfigure		
CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from clause TS34.108 clause 6.10 Parameter Set.
-CTFC information		This IE is repeated for TFC numbers and reference to TS34.108 clause 6.10
CTFC		Reference to TS34.108 clause 6.10 Parameter Set
Power offset information		Not Present
Added or Reconfigured DL TrCH information	A1, A2, A5, A6	Not Present
Added or Reconfigured DL TrCH information	A4	2 TrCHs(DCH for DCCH and DCH for DTCH)
Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH identity		5
DCH quality target		
BLER Quality value		Not Present
-Transparent mode signalling info		Not Present
Downlink transport channel type		DCH
DL Transport channel identity		6
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		
- Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A3	
Downlink transport channel type		DCH
DL Transport channel identity		6
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channel
Dynamic transport format information		
RLC Size		Reference to TS34.108 clause 6.10 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Dynamic transport format information		
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6.10 Parameter Set
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6.10 Parameter Set
- Type of channel coding		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
Coding Rate		Reference to TS34.108 clause 6.10 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6.10 Parameter Set
CRC size		Reference to TS34.108 clause 6.10 Parameter Set
DCH quality target		
BLER Quality value		6.3
Transparent mode signalling info		Not Present
Frequency info	A1,A2,A3, A4,A5,A6	
UARFCN uplink (Nu)		Reference to clause 5.1 Test frequencies
UARFCN downlink (Nd)		Reference to clause 5.1 Test frequencies
Maximum allowed UL TX power	A1,A2,A3, A4,A5,A6	33dBm
CHOICE channel requirement	A5, A6	Not Present
CHOICE channel requirement	A1, A2, A3, A4	Uplink DPCH info
Uplink DPCH power control info		
DPCCH power offset		-6dB
PC Preamble		1 frame
SRB delay		7 frames
Power Control Algorithm		Algorithm1
TPC step size		1dB
Scrambling code type		Long
Scrambling code number		0 (0 to 16777215)
Number of DPDCH		Not Present(1)
spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
Number of FBI bit		Reference to TS34.108 clause 6.10 Parameter Set
Puncturing Limit		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE Mode	A1,A2,A3, A4,A5,A6	FDD
Downlink PDSCH information		Not Present

Information Element	Condition	Value/remark
Downlink information common for all radio links	A5, A6	Not Present
Downlink information common for all radio links	A1, A2, A3	
- Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
DPC mode		0 (single)
CHOICE mode		FDD
Power offset P$_{Pilot-DPDCH}$		0
DL rate matching restriction information		Not Present
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
DPCH compressed mode info		Not Present
TX Diversity mode		None
- SSDT information		Not Present
Default DPCH Offset Value		Not Present
Downlink information common for all radio links	A4	
Downlink DPCH info common for all RL		
Timing indicator		Initialise
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
DPC mode		0 (single)
CHOICE mode		FDD
Power offset P$_{Pilot-DPDCH}$		0
DL rate matching restriction information		Not Present
- Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Fixed or Flexible Position		Reference to TS34.108 clause 6.10 Parameter Set

Information Element	Condition	Value/remark
TFCI existence		Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE SF		Reference to TS34.108 clause 6.10 Parameter Set
DPCH compressed mode info		Not Present
TX Diversity mode		None
SSDT information		Not Present
Default DPCH Offset Value		Not Present
Downlink information for each radio link list	A1, A2, A3, A4	
Downlink information for each radio links		
CHOICE mode		FDD
- Primary CPICH info		
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		
Primary CPICH usage for channel estimation		Primary CPICH may be used
DPCH frame offset		0 chips
Power offset $P_{Pilot-DPDCH}$		0
- Secondary CPICH info		Not Present
DL channelisation code		
Secondary scrambling code		4
Spreading factor		Reference to TS34.108 clause 6.10 Parameter Set
Code number		0
Scrambling code change		No change
TPC combination index		0
SSDT Cell Identity		Not Present
Closed loop timing adjustment mode		Not Present
- SCCPCH information for FACH		Not Present
Downlink information for each radio link	A5	
Choice mode		FDD
Primary CPICH info		

Information Element	Condition	Value/remark
Primary scrambling code		Ref. to the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not present
SCCPCH information for FACH		Not Present
Downlink information for each radio link	A6	
Choice mode		FDD
Primary CPICH info		
Primary scrambling code		Different from the Default setting in TS34.108 clause 6.1 (FDD)
PDSCH with SHO DCH info		Not Present
PDSCH code mapping		Not Present
Downlink DPCH info for each RL		Not present
SCCPCH information for FACH		Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of TRANSPORT CHANNEL RECONFIGURATION COMPLETE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink TRANSPORT CHANNEL RECONFIGURATION message
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.
Uplink integrity protection activation info	Not checked
CHOICE mode	FDD
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC-TM and (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of TRANSPORT CHANNEL RECONFIGURATION FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identitifer	Checked to see if it is set to identical value of the same IE in the downlink TRANSPORT CHANNEL RECONFIGURATION message.
Integrity check info	The presence if 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.
Failure cause	Checked to see if it meets test requirement

Contents of TRANSPORT FORMAT COMBINATION CONTROL message: AM or UM (in CELL_DCH)

Information Element	**Value/remark**
Message Type	
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.
CHOICE mode	FDD
DPCH/PUSCH TFCS in Uplink	

CHOICE *Subset representation*	Allowed transport format combination list
Allowed Transport format combination	0 (The TFC is constructed from ALL TF0)
Activation time for TFC subset	Not Present
TFC Control duration	Not Present

Contents of UE CAPABILITY ENQUIRY message: AM or UM

Information Element	Value/remark
Message Type	
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.
Capability update requirement	
UE radio access FDD capability update requirement	TRUE
UE radio access TDD capability update requirement	FALSE
System specific capability update requirement list	Not Present

Contents of UE CAPABILITY INFORMATION message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.
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.
UE radio access capability	Value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings

Information Element	Value/remark
ICS Version	
PDCP Capability	
RLC Capability	
Transport channel capability	
RF Capability FDD	
RF Capability TDD	
Physical channel capability	
UE multi-mode/multi-RAT capability	
Security Capability	
LCS Capability	
Measurement capability	
UE radio access capability extension	Value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings
UE system specific capability	Not Checked

Contents of UE CAPABILITY INFORMATION CONFIRM message: UM

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 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.

Contents of URA UPDATE message: TM

Information Element	Value/remark
Message Type	
U-RNTI	
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Checked to see if it is absent
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.
URA update cause	See the test content
Protocol error indicator	Checked to see if it is absent or set to 'FALSE'
Protocol error information	Checked to see if it is absent

Contents of URA UPDATE CONFIRM message: UM

Information Element	Value/remark
Message Type	
U-RNTI	If this message is sent on CCCH, use the following values. Else, this IE is absent.
- SRNC identity	0000 0000 0001B
- S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Arbitrarily selects and 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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	See the test content
Downlink counter synchronisation info	Not Present

A.2 Default RRC Message Contents (3.84 Mcps TDD)

[FFS]

A.3 Default RRC Message Contents (1.28 Mcps TDD)

This clause contains the default values of RRC messages, other than those specified in TS 34.108 clauses 6 and 9. Unless indicated otherwise in specific test cases, they shall be transmitted by the system simulator in RRC messages, and which are required to be received from the UE under test.

The necessary L3 messages are listed in alphabetic order, with the exception of the SYSTEM INFORMATION messages, where it is the information elements which are listed in alphabetic order (this is because some information elements occur in several SYSTEM INFORMATION types).

In this clause, decimal values are normally used. However, sometimes a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Default SYSTEM INFORMATION:

NOTE 1: SYSTEM INFORMATION BLOCK TYPE 1 (except for PLMN type "GSM-MAP"), SYSTEM INFORMATION BLOCK TYPE 8, SYSTEM INFORMATION BLOCK TYPE 9, SYSTEM INFORMATION BLOCK TYPE 10, SYSTEM INFORMATION BLOCK TYPE 14, SYSTEM INFORMATION BLOCK TYPE 15 and SYSTEM INFORMATION BLOCK TYPE 16 messages are not used.

Contents of CELL UPDATE message: TM

Information Element	Value/remark
Message Type	
U-RNTI	Checked to see if it is set to the following values
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Checked to see if it is absent
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.
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
CN domain identity	Checked to see if it is one of the supported CN domains
START	Checked to see if it is present
AM_RLC error indication (RB2 or RB3)	Checked to see if it is set to 'FALSE'
AM_RLC error indication (RB>3)	Checked to see if it is set to 'FALSE'
Cell update cause	See the test content
Failure cause	Checked to see if it is absent
RB timer indicator	
T314 expired	Checked to see if it is set to 'FALSE'
T315 expired	Checked to see if it is set to 'FALSE'
Measured results on RACH	Not checked

Contents of CELL UPDATE CONFIRM message: UM

Information Element	Value/remark
Message Type	
U-RNTI	If this message is sent on CCCH, use the following values. Else, this IE is absent.
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Selects an arbitrary integer between 0 to 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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
Activation time	Not Present – use default value
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State indicator	CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
RLC re-establish indicator (RB2 or RB3)	FALSE
RLC re-establish indicator (RB>3)	FALSE
CN information info	Not Present
URA identity	0000 0000 0001B
RB information to release list	Not Present
RB information to reconfigure list	Not Present
RB information to be affected list	Not Present
Downlink counter synchronisation info	Not Present
UL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured TrCH information list	Not Present
CHOICE mode	TDD
DL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
Added or Reconfigured TrCH information list	Not Present
Frequency info	Not Present
Maximum allowed UL TX power	Not Present
CHOICE channel requirement	Not Present
CHOICE mode	TDD
Downlink information common for all radio links	Not Present
Downlink information per radio link list	Not Present

Contents of MEASUREMENT CONTROL message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Arbitrarily selects an unused integer between 0 to 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.
Measurement Identity	1
Measurement Command	Setup
Measurement Reporting Mode	
Measurement Report Transfer Mode	Acknowledged mode RLC
Measurement Reporting/Event Trigger Reporting Mode	Periodical reporting
Additional measurement list	Not Present
CHOICE Measurement type	Intra-frequency measurement
Intra-frequency measurement	
Intra-frequency cell info	
New intra-frequency cell	
Intra-frequency cell id	0
Cell info	
Cell individual offset	0dB
Reference time difference to cell	Not Present
Read SFN number	FALSE
CHOICE mode	TDD
Primary CCPCH info	
CHOICE mode	TDD
CHOICE TDD option	1.28 Mcps TDD
TSTD indicator	TRUE
Cell parameters ID	4
Block STTD indicator	TRUE

—————— Primary CCPCH TX power	Not Present
—————— Timeslot List	Not Present
———— Intra-frequency measurement quantity	
———— Filter coefficient	0
———— CHOICE mode	TDD
———— Measurement quantity list	
————— - Measurement quantity	Primary CCPCH 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	TRUE
———— CHOICE mode	TDD
———— - Timeslot ISCP reporting indicator	FALSE
———— Proposed TGSN Reporting required	FALSE
—— Primary CCPCH RSCP reporting indicator	TRUE
———— Pathloss reporting indicator	FALSE
———— Reporting quantities for monitored cells	
———— SFN-SFN observed time difference reporting indicator	No report
———— Cell synchronisation information reporting indicator	FALSE
———— Cell Identity reporting indicator	TRUE
———— - CHOICE mode	TDD
———— Timeslot ISCP reporting indicator	FALSE
———— Proposed TGSN Reporting required	FALSE
———— Primary CCPCH RSCP reporting indicator	TRUE
———— Pathloss reporting indicator	FALSE
———— Reporting quantities for detected set cells	Not Present
———— Reporting cell status	
———— CHOICE reported cell	Report cell within active set and/or monitored cells on used frequency .
———— - Maximum number of reported cells	2
———— Measurement validity	Not Present

CHOICE report criteria	Periodic reporting criteria
Amount of reporting	Infinity
Reporting interval	64 sec
DPCH Compressed mode status info	Not Present

Contents of MEASUREMENT CONTROL FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it's set to the identical value for the same IE in the downlink MEASUREMENT CONTROL message
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.
Failure cause	See the test content

Contents of MEASUREMENT REPORT message: AM

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	Not present
SFN-SFN observed time difference	Checked that this IE is absent

Cell synchronisation information	Checked that this IE is absent
CHOICE mode	Checked that this is TDD
Cell parameters Id	4
Proposed TGSN	Checked that this IE is absent
Primary CCPCH RSCP	Checked that this IE is present.
Pathloss	Checked that this IE is absent
- Timeslot list	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

Contents of PAGING TYPE 1 message: TM (SMS in CS)

Information Element	Value/remark
Message Type	
Paging record	
CHOICE Used paging identity	CN identity
Paging cause	Terminating Low Priority Signalling
CN domain identity	CS domain
CHOICE UE identity	
IMSI (GSM MAP)	Set to the same octet string as in the IMSI stored in the USIM card
BCCH modification info	Not Present

Contents of PAGING TYPE 1 message: TM (SMS in PS)

Information Element	Value/remark
Message Type	
Paging record	
CHOICE Used paging identity	CN identity
Paging cause	Terminating Low Priority Signalling
CN domain identity	PS domain
CHOICE UE identity	
IMSI (GSM MAP)	Set to the same octet string as in the IMSI stored in the USIM card
BCCH modification info	Not Present

Contents of PAGING TYPE 2 message: AM (Speech in CS)

Information Element	Value/remark
Message Type	
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.
Paging cause	Terminating Conversational Call
CN domain identity	CS domain
Paging record type identifier	Select the same type as in the IE "Initial UE Identity" in RRC CONNECTION REQUEST" message.

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM

Information Element	Condition	Value/remark
Message Type		
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 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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient		Not Present

CN information info		Not Present
URA identity		Not Present
Downlink counter synchronisation info		Not Present
Frequency info		
CHOICE mode		TDD
UARFCN(Nt)		Reference to TS34.108 clause 5.1 Parameter set.
Maximum allowed UL TX power		30dBm
CHOICE channel requirement		Uplink DPCH info
Uplink DPCH info	A1, A2, A3, A4	
CHOICE mode		TDD
Uplink DPCH power control info		
UL Target SIR		Reference to TS34.108
CHOICE UL OL PC info		Individually signalled
CHOICE TDD option		1.28 Mcps TDD
TPC step size		1 dB
Primary CCPCH Tx Power		Reference to TS34.108
CHOICE mode		TDD
Uplink Timing Advance Control		Not Present
UL CCTrCH List		
TFCS ID		1
Time info		
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
Duration		infinite
Common timeslot info		
2nd interleaving mode		Reference to TS34.108 clause 6 Parameter Set.
TFCI coding		Reference to TS34.108 clause 6 Parameter Set.
Puncturing Limit		Reference to TS34.108 clause 6 Parameter Set.
Repetition Period		Reference to TS34.108 clause 6 Parameter Set.
Repetition Length		Reference to TS34.108 clause 6 Parameter Set
Uplink DPCH timeslots and codes		

- First timeslot information		
CHOICE TDD option		1.28 Mcps
Timeslot number		The number of an uplink timeslot that has unassigned codes.
TFCI existence		TRUE
Midamble shift and burst type		
CHOICE TDD option		1.28 Mcps
Midamble Allocation Mode		Default
Midamble configuration		16
CHOICE TDD option		1.28 Mcps
Modulation		QPSK
SS TPC Symbols		1
First timeslot code list		Repeated (1,2) for each channelisation code assigned in the slot to meet the needs of TS34.108 clause 6 Parameter Set.
- Channelisation Code		(i/SF) where i denotes an unassigned code matching the SF specified in TS34.108 clause 6 Parameter Set.
CHOICE more timeslots		The presence of this IE depends on the number of resources specified in TS34.108 section 6 and the number of slots in which they are assigned.
CHOICE Mode		TDD
Downlink information common for all radio links	A1, A2, A3, A4	
Downlink DPCH info common for all RL		
- Timing indicator		Maintain
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
CHOICE mode		TDD
TPC Step Size		1
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Default DPCH Offset Value		Not Present
Downlink information for each radio links		
- CHOICE mode		TDD
Primary CCPCH info		

CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Cell parameters ID		0
Block STTD indicator		FALSE
Downlink DPCH info for each RL		
- CHOICE mode		TDD
DL CCTrCH List		
TFCS ID		1
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
Duration		Infinite
Common timeslot info		
2nd interleaving mode		Reference to TS34.108
TFCI coding		TRUE
Puncturing limit		Reference to TS34.108 clause 6 Parameter Set
Repetition period		1
Repetition length		Empty
Downlink DPCH timeslots and codes		
First Individual timeslot info		
Individual timeslot info		
Timeslot number		The number of an downlink timeslot that has unassigned codes.
TFCI existence		TRUE
Midamble shift and burst type		
- CHOICE TDD option		1.28 Mcps
Midamble allocation mode		Default
Midamble configuration		16
CHOICE TDD option		1.28 Mcps TDD
Modulation		QPSK
SS TPC Symbols		1
First timeslot channelisation codes		
First channelisation code		(i/SF) where i is the lowest numbered code that is being assigned and SF is specified in TS34.108 clause 6 Parameter Set.
Last channelisation code		(j/SF) where j is the highest numbered code

		that is being assigned in the slot.
— Bitmap		Bitmap of codes that are assigned in the slot.
— CHOICE more timeslots		The presence of this IE depends upon whether the requirements of TS34.108 Parameter Set can be met by the codes that have been assigned in the first timeslot.
— Secondary CCPCH info		Not Present
— References to system information blocks		Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of PHYSICAL CHANNEL RECONFIGURATION COMPLETE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it's set to identical value of the same IE in the downlink PHYSICAL CHANNEL RECONFIGURATION message
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.
Uplink integrity protection activation info	Not checked
CHOICE mode	TDD
— CHOICE TDD option	1.28 Mcps
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC TM, (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked

Uplink counter synchronisation info	Not checked

Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Condition	Value/remark
Message Type		
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.
Integrity protection mode info		Not Present
Ciphering mode info		The presence of this IE is dependent on IXIT statements in TS 34.123-2. If ciphering is indicated to be active, this IE present with the values of the sub IEs as stated below. Else, this IE is omitted.
Ciphering mode command		Start
- Ciphering algorithm		Use one of the supported ciphering algorithms
Ciphering activation time for DPCH		(256+CFN-(CFN MOD 8 + 8))MOD 256
Radio bearer downlink ciphering activation time info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient		Not Present
CN information info		Not Present
URA identity		Not Present
Signalling RB information to setup		Not Present
RAB information for setup	A1	

~~- RAB info~~		
~~RAB identity~~		~~0000 0001B~~
~~CN domain identity~~		~~CS domain~~
~~NAS Synchronization Indicator~~		~~Not Present~~
~~Re-establishment timer~~		
~~T314~~		~~20 seconds~~
~~RB information to setup~~		
~~RB identity~~		~~10~~
~~PDCP info~~		~~Not Present~~
~~CHOICE RLC info type~~		~~RLC info~~
~~CHOICE Uplink RLC mode~~		~~TM RLC~~
~~Transmission RLC discard~~		~~Not Present~~
~~Segmentation indication~~		~~TRUE~~
~~CHOICE Downlink RLC mode~~		~~TM RLC~~
~~Segmentation indication~~		~~TRUE~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~1~~
~~Logical channel identity~~		~~7~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~1~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~6~~
~~Logical channel identity~~		~~7~~
~~RAB information for setup~~	~~A2~~	
~~RAB info~~		
~~RAB identity~~		~~0000 0001B~~
~~CN domain identity~~		~~CS domain~~
~~NAS Synchronisation Indicator~~		~~Not Present~~

~~Re-establishment timer~~		
~~T314~~		~~20 seconds~~
~~RB information to setup~~		
~~RB identity~~		~~10~~
~~PDCP info~~		~~Not Present~~
~~CHOICE RLC info type~~		~~RLC info~~
~~CHOICE Uplink RLC mode~~		~~TM RLC~~
~~Transmission RLC discard~~		~~Not Present~~
~~Segmentation indication~~		~~TRUE~~
~~CHOICE Downlink RLC mode~~		~~TM RLC~~
~~Segmentation indication~~		~~TRUE~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~Number of RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~1~~
~~Logical channel identity~~		~~7~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~1~~
~~Downlink RLC logical channel info~~		
~~Number of RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~6~~
~~Logical channel identity~~		~~7~~
~~RB information to setup~~		
~~RB identity~~		~~11~~
~~PDCP info~~		~~Not Present~~
~~CHOICE RLC info type~~		~~RLC info~~
~~CHOICE Uplink RLC mode~~		~~TM RLC~~
~~Transmission RLC discard~~		~~Not Present~~
~~Segmentation indication~~		~~TRUE~~
~~CHOICE Downlink RLC mode~~		~~TM RLC~~
~~Segmentation indication~~		~~TRUE~~
~~RB mapping info~~		

———— Information for each multiplexing option		
———— Number of RLC logical channels		1
———— Uplink transport channel type		DCH
———— UL Transport channel identity		2
———— Logical channel identity		8
———— CHOICE RLC size list		All
———— MAC logical channel priority		1
———— Downlink RLC logical channel info		
———— Number of RLC logical channels		1
———— Downlink transport channel type		DCH
———— DL DCH Transport channel identity		7
———— Logical channel identity		8
———— RB information to setup		(This IE is needed for 12.2 kbps and 10.2 kbps)
———— RB identity		12
———— PDCP info		Not Present
———— CHOICE RLC info type		RLC info
———— CHOICE Uplink RLC mode		TM RLC
———— Transmission RLC discard		Not Present
———— Segmentation indication		TRUE
———— CHOICE Downlink RLC mode		TM RLC
———— Segmentation indication		TRUE
———— RB mapping info		
———— Information for each multiplexing option		
———— Number of RLC logical channels		1
———— Uplink transport channel type		DCH
———— UL Transport channel identity		3
———— Logical channel identity		9
———— CHOICE RLC size list		All
———— MAC logical channel priority		1
———— Downlink RLC logical channel info		
———— Number of RLC logical channels		1
———— Downlink transport channel type		DCH
———— DL DCH Transport channel identity		8
———— Logical channel identity		9

RAB information for setup	A3, A4	
- RAB info		
- RAB identity		0000 0001B
- CN domain identity		PS domain
- NAS Synchronization Indicator		Not Present
- Re establishment timer		
- T314		20 seconds
- RB information to setup		
- RB identity		20
- PDCP info		Not Present
- CHOICE RLC info type		RLC info
- CHOICE Uplink RLC mode		AM RLC
- Transmission RLC discard		
- SDU discard mode		Max DAT retransmissions
- MAX_DAT		4
- Timer_MRW		100
- MaxMRW		4
- Transmission window size		8
- Timer_RST		500
- Max_RST		4
- Polling info		
- Timer_poll_prohibit		200
- Timer_poll		200
- Poll_SDU		1
- Last transmission PDU poll		TRUE
- Last retransmission PDU poll		TRUE
- Poll_Windows		99
- CHOICE Downlink RLC mode		AM RLC
- In sequence delivery		TRUE
- Receiving window size		8
- Downlink RLC status info		
- Timer_status_prohibit		200
- Timer_EPC		200
- Missing PDU indicator		TRUE

RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		1
Logical channel identity		7
CHOICE RLC size list		All
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		6
Logical channel identity		7
RAB information for setup	A5, A6	
RAB info		(AM DTCH for PS domain)
RAB identity		0000 0001B
CN domain identity		PS domain
NAS Synchronization Indicator		Not Present
Re-establishment timer		
T314		20 seconds
RB information to setup		
RB identity		20
PDCP info		Not Present
CHOICE RLC info type		RLC info
CHOICE Uplink RLC mode		AM RLC
Transmission RLC discard		
CHOICE SDU discard mode		Max DAT retransmissions
MAX_DAT		4
Timer_MRW		100
MaxMRW		4
Transmission window size		8
Timer_RST		500
Max_RST		4

~~- Polling info~~		
~~- Timer_poll_prohibit~~		~~200~~
~~- Timer_poll~~		~~200~~
~~- Poll_SDU~~		~~1~~
~~- Last transmission PDU poll~~		~~TRUE~~
~~- Last retransmission PDU poll~~		~~TRUE~~
~~- Poll_Windows~~		~~99~~
~~- CHOICE Downlink RLC mode~~		~~AM RLC~~
~~- In sequence delivery~~		~~TRUE~~
~~- Receiving window size~~		~~8~~
~~- Downlink RLC status info~~		
~~- Timer_status_prohibit~~		~~200~~
~~- Timer_EPC~~		~~200~~
~~- Missing PDU indicator~~		~~TRUE~~
~~- RB mapping info~~		
~~- Information for each multiplexing option~~		
~~- RLC logical channel mapping indicator~~		~~Not Present~~
~~- Number of uplink RLC logical channels~~		~~1~~
~~- Uplink transport channel type~~		~~RACH~~
~~- Logical channel identity~~		~~7~~
~~- CHOICE RLC size list~~		~~Explicit~~
~~- RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~- MAC logical channel priority~~		~~6~~
~~- Downlink RLC logical channel info~~		
~~- Number of downlink RLC logical channels~~		~~1~~
~~- Downlink transport channel type~~		~~FACH/PCH~~
~~- Logical channel identity~~		~~6~~
~~RB information to be affected~~	~~A1, A2, A3, A4~~	~~(UM DCCH for RRC)~~
~~- RB identity~~		~~1~~
~~- RB mapping info~~		
~~- Information for each multiplexing option~~		
~~- RLC logical channel mapping indicator~~		~~Not Present~~
~~- Number of uplink RLC logical channels~~		~~1~~
~~- Uplink transport channel type~~		~~DCH~~

~~UL Transport channel identity~~		~~5~~
~~Logical channel identity~~		~~1~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~1~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~10~~
~~Logical channel identity~~		~~1~~
~~RB information to be affected~~	~~A1, A2, A3, A4~~	~~(AM DCCH for RRC)~~
~~RB identity~~		~~2~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~
~~Logical channel identity~~		~~2~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~2~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~10~~
~~Logical channel identity~~		~~2~~
~~RB information to be affected~~	~~A1, A2, A3, A4~~	~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~		~~3~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~

Logical channel identity		3
CHOICE RLC size list		All
MAC logical channel priority		3
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
- DL DCH Transport channel identity		10
Logical channel identity		3
RB information to be affected	A1, A2, A3, A4	(AM DCCH for NAS_DT Low priority)
RB identity		4
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
- UL Transport channel identity		5
Logical channel identity		4
CHOICE RLC size list		All
MAC logical channel priority		4
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		4
RB information to be affected	A5, A6	(UM DCCH for RRC)
RB identity		1
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		RACH
Logical channel identity		1
CHOICE RLC size list		Explicit
RLC size index		Reference to TS34.108 clause 6 Parameter Set

~~MAC logical channel priority~~		~~2~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH/PCH~~
~~Logical channel identity~~		~~1~~
~~RB information to be affected~~	~~A5, A6~~	~~(AM DCCH for RRC)~~
~~RB identity~~		~~2~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~RACH~~
~~Logical channel identity~~		~~2~~
~~CHOICE RLC size list~~		~~Explicit~~
~~RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~MAC logical channel priority~~		~~3~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH/PCH~~
~~Logical channel identity~~		~~2~~
~~RB information to be affected~~	~~A5, A6~~	~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~		~~3~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~RACH~~
~~Logical channel identity~~		~~3~~
~~CHOICE RLC size list~~		~~Explicit~~
~~RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~MAC logical channel priority~~		~~4~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH/PCH~~

———— Logical channel identity		3
RB information to be affected	A5, A6	(AM DCCH for NAS_DT Low priority)
———— RB identity		4
———— RB mapping info		
———— Information for each multiplexing option		
———— RLC logical channel mapping indicator		Not Present
———— Number of uplink RLC logical channels		1
———— Uplink transport channel type		RACH
———— Logical channel identity		4
———— CHOICE RLC size list		Explicit
———— RLC size index		Reference to TS34.108 clause 6 Parameter Set
———— MAC logical channel priority		5
———— Downlink RLC logical channel info		
———— Number of downlink RLC logical channels		1
———— Downlink transport channel type		FACH/PCH
———— Logical channel identity		4
RB information to be affected	A5, A6	(TM BCCH for RRC)
———— RB identity		6
———— RB mapping info		
———— Information for each multiplexing option		
———— Number of downlink RLC logical channels		1
———— Downlink transport channel type		FACH/PCH
———— Logical channel identity		5
———— Downlink RLC logical channel info		Not Present
RB information to be affected	A5 or A6	(TM PCCH for RRC)
———— RB identity		7
———— RB mapping info		
———— Information for each multiplexing option		
———— Number of downlink RLC logical channels		1
———— Downlink transport channel type		FACH/PCH
———— Logical channel identity		1
———— Downlink RLC logical channel info		Not Present
Downlink counter synchronisation info		Not Present
UL Transport channel information for all transport channels	A1, A2,A3,	

	A4	Not Present
~~PRACH TFCS~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual UL CCTrCH information~~		
~~TFCS ID~~		~~1~~
~~Shared Channel Indicator~~		~~FALSE~~
~~UL TFCS~~		
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 information~~		
~~CHOICE TFCS representation~~		~~Complete~~
~~TFCS complete reconfigure information~~		
~~CHOICE CTFC Size~~		~~Refer to TS34.108 clause 6.~~
~~CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~TFC subset~~		
~~CHOICE Subset representation~~		~~Allowed transport format combination list~~
~~Allowed Transport Format combination list~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~UL Transport channel information for all transport channels~~	~~A5, A6~~	
~~TFC subset~~		~~(This IE is repeated for TFC number.)~~
~~Allowed Transport Format combination~~		~~0 to MaxTFCvalue-1 (MaxTFCValue is refer to TS34.108 clause 6 Parameter Set.)~~
~~PRACH TFCS~~		~~(This IE is repeated for TFC number.)~~
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 information~~		
~~CHOICE TFCS representation~~		
~~TFCS complete reconfigure information~~		
~~CHOICE TFCS Size~~		~~Number of used bits must be enough to cover all combinations of CTFC from clauses 6. Refer to TS34.108 clause 6 Parameter Set~~
~~CTFC information~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual UL CCTrCH information~~		~~Not Present~~
~~Deleted UL TrCH information~~	~~A4~~	
~~Uplink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~15~~
~~Deleted UL TrCH information~~	~~A5~~	

—————— Uplink transport channel type		DCH
—————— UL Transport channel identity		1
—————— Uplink transport channel type		DCH
—————— UL Transport channel identity		5
Added or Reconfigured UL TrCH information	A1, A2, A3, A4	
—————— Uplink transport channel type		DCH
—————— UL Transport channel identity		1
—————— TFS		
—————— CHOICE Transport channel type		Dedicated transport channels
—————— Dynamic Transport format information		(This IE is repeated for TFI number)
—————— RLC Size		Reference to TS34.108 clause 6 Parameter Set
—————— Number of TBs and TTI List		(This IE is repeated for TFI number.)
—————— Transmission Time Interval		Not Present
—————— Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
—————— CHOICE Logical Channel list		ALL
—————— Semi-static Transport Format information		
—————— Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
—————— Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
—————— Coding Rate		Reference to TS34.108 clause 6 Parameter Set
—————— Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
—————— CRC size		Reference to TS34.108 clause 6 Parameter Set
Added or Reconfigured UL TrCH information	A1, A2, A3, A4	If TrCH reconfiguration is executed then this is needed (e.g. The rate of SRB for DCCH is changed.).
—————— Uplink transport channel type		DCH
—————— UL Transport channel identity		5
—————— TFS		
—————— CHOICE Transport channel type		Dedicated transport channels
—————— Dynamic Transport format information		(This IE is repeated for TFI number)
—————— RLC Size		Reference to TS34.108 clause 6 Parameter Set
—————— Number of TBs and TTI List		(This IE is repeated for TFI number.)
—————— Transmission Time Interval		Not Present
—————— Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
—————— CHOICE Logical Channel list		ALL
—————— Semi-static Transport Format information		

~~Transmission time interval~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Type of channel coding~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Coding Rate~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Added or Reconfigured UL TrCH information~~	~~A2~~	
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~2~~
~~TFS~~		
~~CHOICE Transport channel type~~		~~Dedicated transport channels~~
~~Dynamic Transport format information~~		~~(This IE is repeated for TFI number)~~
~~RLC size~~		~~Reference to clause 6 Parameter Set~~
~~Number of TBs and TTI List~~		~~Reference to clause 6 Parameter Set~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of transport blocks~~		~~Reference to clause 6 Parameter Set~~
~~CHOICE Logical Channel List~~		~~All~~
~~Semi-static Transport Format information~~		
~~Transmission time interval~~		~~Reference to clause 6 Parameter Set~~
~~Type of channel coding~~		~~Reference to clause 6 Parameter Set~~
~~Coding Rate~~		~~Reference to clause 6 Parameter Set~~
~~Rate matching attribute~~		~~Reference to clause 6 Parameter Set~~
~~CRC size~~		~~Reference to clause 6 Parameter Set~~
~~Added or Reconfigured UL TrCH information~~	~~A2~~	~~(This IE is needed for 12.2 kbps and 10.2 kbps)~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~3~~
~~TFS~~		~~(This IE is repeated for TFI number)~~
~~CHOICE Transport channel type~~		~~Dedicated transport channels~~
~~Dynamic Transport format information~~		
~~RLC size~~		~~Reference to clause 6 Parameter Set~~
~~Number of TBs and TTI List~~		~~Reference to clause 6 Parameter Set~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of transport blocks~~		~~Reference to clause 6 Parameter Set~~
~~CHOICE Logical Channel List~~		~~All~~
~~Semi-static Transport Format information~~		

Transmission time interval		Reference to clause 6 Parameter Set
Type of channel coding		Reference to clause 6 Parameter Set
Coding Rate		Reference to clause 6 Parameter Set
Rate matching attribute		Reference to clause 6 Parameter Set
CRC size		Reference to clause 6 Parameter Set
DL Transport channel information common for all transport channel	A1,A2,A3,A4	
- SCCPCH TFCS		Not Present
CHOICE mode		TDD
Individual DL CCTrCH information		
DL TFCS Identity		
TFCS Id		1
Shared Channel Indicator		FALSE
CHOICE DL parameters		Independent
DL DCH TFCS		(This IE is repeated for TFC number.)
CHOICE TFCI signalling		Normal
- TFCI Field 1 information		
CHOICE TFCS representation		Complete
TFCS complete reconfigure information		
CHOICE CTFC Size		Refer to TS34.108 clause 6.
CTFC information		Refer to TS34.108 clause 6.
DL Transport channel information common for all transport channel	A5, A6	
SCCPCH TFCS		(This IE is repeated for TFC number.)
CHOICE TFCI signalling		Normal
TFCI Field 1 information		
CHOICE TFCS representation		Addition
- TFCS addition information		
CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from clause 6.
CTFC information		Refer to TS34.108 clause 6 Parameter Set
Power offset information		Not Present
CHOICE mode		TDD
IndividualDL CCTrCH information		Not Present
Deleted DL TrCH information	A4	
Downlink transport channel type		DCH

Transport channel identity		12
Downlink transport channel type		DCH
Transport channel identity		13
Downlink transport channel type		DCH
Transport channel identity		14
Deleted DL TrCH information	A5	
Downlink transport channel type		DCH
DL Transport channel identity		6
Downlink transport channel type		DCH
Transport channel identity		10
Added or Reconfigured DL TrCH information	A1,A2	
Downlink transport channel type		DCH
DL Transport channel identity		6
CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH identity		1
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A1, A2, A3, A4	If TrCH reconfiguration is executed then this is needed(e.g. The rate of SRB for DCCH is changed.).
Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Explicit
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set

——— Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
——— Coding Rate		Reference to TS34.108 clause 6 Parameter Set
——— Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
——— CRC size		Reference to TS34.108 clause 6 Parameter Set
——— DCH quality target		
——— BLER Quality value		-6.3
——— Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A2	
——— Downlink transport channel type		DCH
——— Transport channel identity		7
——— CHOICE DL parameters		SameAsUL
——— Uplink transport channel type		DCH
——— UL TrCH identity		2
Added or Reconfigured DL TrCH information	A2	(This IE is needed for 12.2 kbps and 10.2 kbps)
——— Downlink transport channel type		DCH
——— Transport channel identity		8
——— CHOICE DL parameters		SameAsUL
——— Uplink transport channel type		DCH
——— UL TrCH identity		3
——— DCH quality target		
——— BLER Quality value		-6.3
——— Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A3, A4	
——— Downlink transport channel type		DCH
——— DL Transport channel identity		6
——— CHOICE DL parameters		Explicit
——— TFS		
——— CHOICE Transport channel type		Dedicated transport channels
——— Dynamic Transport format information		(This IE is repeated for TFI number)
——— RLC Size		Reference to TS34.108 clause 6 Parameter Set
——— Number of TBs and TTI List		(This IE is repeated for TFI number.)
——— Transmission Time Interval		Not Present
——— Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
——— CHOICE Logical Channel list		ALL

Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
DCH quality target		
BLER Quality value		6.3
Transparent mode signalling info		Not Present
Frequency info		
CHOICE mode		TDD
UARFCN (Nt)		Reference to TS34.108 clause 6 Parameter Set
Maximum allowed UL TX power		30dBm
CHOICE channel requirement	A1, A3, A4	Uplink DPCH info
Uplink DPCH power control info		
CHOICE mode		TDD
UL Target SIR		Reference to TS34.108 Parameter set.
CHOICE UL OL PC info		Individually signalled
CHOICE TDD option		1.28 Mcps
TPC step size		1 dB
Primary CCPCH Tx Power		Not Present
CHOICE mode		TDD
Uplink Timing Advance Control		Not Present
UL CCTrCH List		
TFCS Id		1
Time info		
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
Duration		infinite
Common timeslot info		
2nd interleaving mode		Reference to TS34.108 clause 6 Parameter Set.
TFCI coding		Reference to TS34.108 clause 6 Parameter set.
Puncturing Limit		Reference to TS34.108 clause 6 Parameter set.
Repetition Period		Reference to TS34.108 clause 6 Parameter set.

Repetition Length			Reference to TS34.108 clause 6 Parameter set.
Uplink DPCH timeslots and code			
First individual timeslot info			
Timeslot number			The number of an uplink timeslot that has unassigned codes.
TFCI existence			TRUE
Midamble shift and burst type			
CHOICE TDD option			1.28 Mcps
Midamble allocation mode			Default
Midamble configuration			16
CHOICE TDD option			1.28 Mcps TDD
Modulation			QPSK
SS TPC Symbols			1
First timeslot channelisation codes			Repeated (1,2) for each channelisation code assigned in the slot to meet the needs of TS34.108 clause 6 Parameter Set.
Channelisation code			(i/SF) where i denotes an unassigned code matching the SF specified in TS34.108 clause 6 Parameter Set.
CHOICE more timeslots			The presence of this IE depends upon the number of resources specified in TS34.108 section 6 and the number of slots in which they are being assigned.
CHOICE channel requirement		A2	Uplink DPCH info
Uplink DPCH power control info			
CHOICE mode			TDD
UL Target SIR			Reference to TS34.108 Parameter set.
CHOICE UL OL PC info			Individually signalled
CHOICE TDD option			1.28 Mcps
TPC step size			1 dB
Primary CCPCH Tx Power			Not Present
CHOICE mode			TDD
Uplink Timing Advance Control			Not Present
UL CCTrCH List			
TFCS Id			1
Time info			
Activation time			(256+CFN-(CFN MOD 8 + 8))MOD 256
Duration			infinite

- Common timeslot info		
2nd interleaving mode		Reference to TS34.108 section 6 Parameter set.
TFCI coding		Reference to TS34.108 section 6 Parameter set.
Puncturing Limit		Reference to TS34.108 section 6 Parameter set.
Repetition Period		Reference to TS34.108 clause 6 Parameter set.
Repetition Length		Reference to TS34.108 clause 6 Parameter set.
Uplink DPCH timeslots and code		
First individual timeslot info		The number of an uplink timeslot that has unassigned codes.
Timeslot number		
TFCI existence		TRUE
Midamble shift and burst type		
- CHOICE TDD option		1.28 Mcps
Midamble allocation mode		Default
Midamble configuration		16
CHOICE TDD option		1.28 Mcps TDD
Modulation		QPSK
SS-TPC Symbols		1
First timeslot channelisation codes		Repeated (1,2) for each channelisation code assigned in the slot to meet the needs of TS34.108 clause 6 Parameter Set.
- Channelisation code		(i/SF) where i denotes an unassigned code matching the SF specified in TS34.108 clause 6 Parameter Set.
CHOICE more timeslots		The presence of this IE depends upon the number of resources specified in TS34.108 section 6 and the number of slots in which they are being assigned.
CHOICE Mode		TDD
Downlink information common for all radio links	A1, A2, A3, A4	
Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN-targetSFN frame offset		Not Present
Downlink DPCH power control information		
CHOICE mode		TDD
TPC step size		1 dB

CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Default DPCH offset value		0
Downlink information for each radio link list	A1, A2, A3, A4	
Downlink information for each radio link		
CHOICE mode		TDD
Primary CCPCH info		
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Cell parameters ID		0
Block STTD indicator		FALSE
Downlink DPCH info for each RL		
CHOICE mode		TDD
DL CCTrCH List		
TFCS ID		1
Time info		
Activation time		(256+CFN-(CFN mod 8 + 8))mod 256
Duration		infinite
Common timeslot info		
2nd interleaving mode		Reference to TS34.108
TFCI coding		TRUE
Puncturing limit		Reference to TS34.108 clause 6 Parameter Set
Repetition period		1
Repetition length		Empty
Downlink DPCH timeslots and codes		
Individual timeslot info		
Timeslot number		The number of a downlink timeslot that has unassigned codes.
TFCI existence		TRUE
Midamble shift and burst type		
CHOICE TDD option		1.28 Mcps
Midamble allocation mode		Default

Midamble configuration		16
CHOICE TDD option		1.28 Mcps TDD
Modulation		QPSK
SS TPC Symbols		1
First timeslot channelisation codes		
First channelisation code		(i/SF) where i is the lowest numbered code that is being assigned and SF is specified in TS34.108 clause 6 Parameter Set..
Last channelisation code		(j/SF) where j is the highest numbered code that is being assigned in the slot.
Bitmap		Bitmap of the codes that are being assigned in the slot.
CHOICE more timeslots		The presence of this IE depends upon whether the requirements of TS34.108 clause 6 Parameter Set could be met by the codes that have been assigned in the first timeslot..
UL CCTrCH TPC List		Not Present
SCCPCH information for FACH		Not Present
Downlink information for each radio link list	A5, A6	
Downlink information for each radio link		
Choice mode		TDD
Primary CCPCH info		
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Cell parameters ID		0
Block STTD indicator		TRUE
Downlink DPCH info for each RL		Not Present
SCCPCH information for FACH		Not Present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of RADIO BEARER RECONFIGURATION message: AM or UM

Information Element	Condition	Value/remark
Message Type		
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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient		Not Present
CN information info		Not Present
URA identity		Not Present
RAB information to reconfigure list		Not Present
RB information to reconfigure list	A1, A2, A3	Not Present
RB information to reconfigure list	A4	
— RB information to reconfigure		(UM DCCH for RRC)
— RB identity		1
— PDCP info		Not Present
— CHOICE RLC info type		Not Present
— RB mapping info		
— Information for each multiplexing option		
— RLC logical channel mapping indicator		Not Present
— Number of uplink RLC logical channels		1
— Uplink transport channel type		DCH

UL Transport channel identity		5
Logical channel identity		1
CHOICE RLC size list		All
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		1
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for RRC)
RB identity		2
PDCP info		Not Present
CHOICE RLC info type		Not Present
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		5
Uplink transport channel type		DCH
UL Transport channel identity		1
Logical channel identity		2
CHOICE RLC size list		All
MAC logical channel priority		2
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		2
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for NAS_DT High priority)
RB identity		3
PDCP info		Not Present
CHOICE RLC info type		Not Present
RB mapping info		

— Information for each multiplexing option		
— RLC logical channel mapping indicator		Not Present
— Number of uplink RLC logical channels		1
— Uplink transport channel type		DCH
— UL Transport channel identity		5
— Logical channel identity		3
— CHOICE RLC size list		All
— MAC logical channel priority		3
— Number of downlink RLC logical channels		1
— Downlink transport channel type		DCH
— DL DCH Transport channel identity		10
— Logical channel identity		3
— RB stop/continue		Not Present
— RB information to reconfigure		(AM DCCH for NAS_DT Low priority)
— RB identity		4
— PDCP info		Not Present
— RLC info		Not Present
— RB mapping info		
— Information for each multiplexing option		
— RLC logical channel mapping indicator		Not Present
— Number of uplink RLC logical channels		1
— Uplink transport channel type		DCH
— UL Transport channel identity		5
— Logical channel identity		4
— CHOICE RLC size list		All
— MAC logical channel priority		4
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		DCH
— DL DCH Transport channel identity		10
— Logical channel identity		4
— RB information to reconfigure		(AM DTCH)
— RB identity		20
— PDCP info		Not Present

CHOICE RLC info type		Not Present
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		1
Logical channel identity		7
CHOICE RLC size list		All
MAC logical channel priority		1
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		6
Logical channel identity		7
RB stop/continue		Not Present
RB information to reconfigure list	A5,A6	
RB information to reconfigure		(UM DCCH for RRC)
RB identity		1
PDCP info		Not Present
CHOICE RLC info type		Not Present
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		RACH
Logical channel identity		1
CHOICE RLC size list		Explicit list
RLC size index		Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority		2
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		FACH
Logical channel identity		1

RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for RRC)
RB identity		2
PDCP info		Not Present
CHOICE RLC info type		Not Present
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		RACH
Logical channel identity		2
CHOICE RLC size list		Explicit List
RLC size index		Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority		3
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		FACH
Logical channel identity		2
RB stop/continue		Not Present
RB information to reconfigure		(AM DCCH for NAS_DT High priority)
RB identity		3
PDCP info		Not Present
CHOICE RLC info type		Not Present
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		RACH
Logical channel identity		3
CHOICE RLC size list		Explicit list
RLC size index		Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority		4
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1

— Downlink transport channel type		FACH
— Logical channel identity		3
— RB stop/continue		Not Present
— RB information to reconfigure		(AM DCCH for NAS_DT Low priority)
— RB identity		4
— PDCP info		Not Present
— CHOICE RLC info type		Not Present
— RB mapping info		
— Information for each multiplexing option		
— RLC logical channel mapping indicator		Not Present
— Number of uplink RLC logical channels		1
— Uplink transport channel type		RACH
— Logical channel identity		4
— CHOICE RLC size list		Explicit list
— RLC size index		Reference to TS34.108 clause 6 Parameter Set
— MAC logical channel priority		5
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		FACH
— Logical channel identity		4
— RB stop/continue		Not Present
— RB information to reconfigure		(AM DTCH)
— RB identity		20
— PDCP info		Not Present
— CHOICE RLC info type		Not Present
— RB mapping info		
— Information for each multiplexing option		
— RLC logical channel mapping indicator		Not Present
— Number of uplink RLC logical channels		1
— Uplink transport channel type		RACH
— Logical channel identity		7
— CHOICE RLC size list		Explicit list
— RLC size index		Reference to TS34.108 clause 6 Parameter Set
— MAC logical channel priority		6

~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH~~
~~Logical channel identity~~		~~6~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure~~		~~(TM BCCH for RRC)~~
~~RB identity~~		~~5~~
~~PDCP info~~		~~Not Present~~
~~CHOICE RLC info type~~		~~RLC info~~
~~CHOICE Uplink RLC mode~~		~~Not Present~~
~~CHOICE Downlink RLC mode~~		~~TM RLC~~
~~Segmentation Indication~~		~~TRUE~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH~~
~~Logical channel identity~~		~~5~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to reconfigure~~		~~(TM PCCH for RRC)~~
~~RB identity~~		~~7~~
~~PDCP info~~		~~Not Present~~
~~CHOICE RLC info type~~		~~RLC info~~
~~CHOICE Uplink RLC mode~~		~~Not Present~~
~~CHOICE Downlink RLC mode~~		~~TM RLC~~
~~Segmentation Indication~~		~~TRUE~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~PCH~~
~~Logical channel identity~~		~~1~~
~~RB stop/continue~~		~~Not Present~~
~~RB information to be affected~~	~~A1, A2, A3~~	~~(UM DCCH for RRC)~~

~~RB identity~~		~~1~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~
~~Logical channel identity~~		~~1~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~1~~
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~10~~
~~Logical channel identity~~		~~1~~
~~RB information to be affected~~	~~A1, A2, A3~~	~~(AM DCCH for RRC)~~
~~RB identity~~		~~2~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~
~~Logical channel identity~~		~~2~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~2~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~10~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~1~~
~~Logical channel identity~~		~~2~~
~~RB information to be affected~~	~~A1, A2, A3~~	~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~		~~3~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		

RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		5
Logical channel identity		3
CHOICE RLC size list		All
MAC logical channel priority		3
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		3
RB information to be affected	A1, A2, A3	(AM DCCH for NAS_DT Low priority)
RB identity		4
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		5
Logical channel identity		4
CHOICE RLC size list		All
MAC logical channel priority		4
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		4
RB information to be affected	A1, A2, A3	(TM DTCH)
RB identity		10
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1

── Uplink transport channel type		DCH
── UL Transport channel identity		1
── Logical channel identity		7
── CHOICE RLC size list		All
── MAC logical channel priority		1
── Downlink RLC logical channel info		
── Number of downlink RLC logical channels		1
── Downlink transport channel type		DCH
── DL DCH Transport channel identity		6
── Logical channel identity		7
RB information to be affected	A2	(DTCH TM)
── RB identity		11
── RB mapping info		
── Information for each multiplexing option		
── RLC logical channel mapping indicator		Not Present
── Number of uplink RLC logical channels		1
── Uplink transport channel type		DCH
── UL Transport channel identity		2
── Logical channel identity		8
── CHOICE RLC size list		All
── MAC logical channel priority		1
── Downlink RLC logical channel info		
── Number of downlink RLC logical channels		1
── Downlink transport channel type		DCH
── DL DCH Transport channel identity		7
── Logical channel identity		8
RB information to be affected	A2	(This IE is needed for 12.2 kbps and 10.2 kbps)
── RB identity		12
── RB mapping info		
── Information for each multiplexing option		
── RLC logical channel mapping indicator		Not Present
── Number of uplink RLC logical channels		1
── Uplink transport channel type		DCH
── UL Transport channel identity		3

— Logical channel identity		9
— CHOICE RLC size list		All
— MAC logical channel priority		1
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		DCH
- DL DCH Transport channel identity		8
— Logical channel identity		9
UL Transport channel information for all transport channels	A1, A2, A3, A4	
— PRACH TFCS		Not Present
— CHOICE mode		TDD
- Individual UL CCTrCH information		
— TFCS ID		1
— Shared channel indicator		FALSE
— UL TFCS		
— CHOICE TFCI signalling		Normal
— TFCI Field 1 information		
— CHOICE TFCS representation		Addition
— TFCS addition information		
— CHOICE CTFC Size		Refer to TS34.108 clause 6
- CTFC information		Refer to TS34.108 clause 6 Parameter Set
— TFC subset		
— CHOICE Subset representation		Allowed transport format combination list
— Allowed Transport Format combination list		Refer to TS34.108 clause 6 Parameter Set
UL Transport channel information for all transport channels	A5, A6	
- PRACH TFCS		
— CHOICE TFCI signalling		Normal
— TFCI Field 1 information		
— CHOICE TFCS representation		Addition
— TFCS addition information		
— CHOICE CTFC Size		Refer to TS34.108 clause 6
— CTFC information		Refer to TS34.108 clause 6 Parameter Set

CHOICE mode		TDD
Individual UL CCTrCH information		Not Present
Deleted UL TrCH information	A1, A2, A3	Not Present
Deleted UL TrCH information	A4	
Uplink transport channel type		DCH
Transport channel identity		15
Deleted UL TrCH information	A5	
Uplink transport channel type		DCH
Transport channel identity		1
Uplink transport channel type		DCH
Transport channel identity		5
Added or Reconfigured UL TrCH information	A1, A2, A3, A4	
Uplink transport channel type		DCH
UL Transport channel identity		5
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
Added or Reconfigured UL TrCH information	A4	
Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)

~~RLC Size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Number of TBs and TTI List~~		~~(This IE is repeated for TFI number.)~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of Transport blocks~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CHOICE Logical Channel list~~		~~ALL~~
~~Semi-static Transport Format information~~		
~~- Transmission time interval~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Type of channel coding~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Coding Rate~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~DL Transport channel information common for all transport channel~~	~~A1, A3~~	
~~SCCPCH TFCS~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual DL CCTrCH information~~		
~~- DL TFCS Identity~~		
~~TFCS ID~~		~~1~~
~~Shared Channel Indicator~~		~~FALSE~~
~~CHOICE DL parameters~~		~~Independent~~
~~DL TFCS~~		
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 Information~~		
~~CHOICE TFCI representation~~		~~Addition~~
~~TFCS addition information~~		
~~CHOICE CTFC size~~		~~Refer to TS34.108 clause 6~~
~~- CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~DL Transport channel information common for all transport channel~~	~~A2, A4~~	
~~SCCPCH TFCS~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual DL CCTrCH information~~		
~~- DL TFCS Identity~~		
~~TFCS ID~~		~~1~~
~~Shared Channel Indicator~~		~~FALSE~~

~~CHOICE DL parameters~~		~~Independent~~
~~DL TFCS~~		
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 Information~~		
~~CHOICE TFCI representation~~		~~Addition~~
~~TFCS addition information~~		
~~CHOICE CTFC size~~		~~Refer to TS34.108 clause 6~~
~~CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~DL Transport channel information common for all transport channel~~	~~A5, A6~~	
~~SCCPCH TFCS~~		~~(This IE is repeated for TFC number.)~~
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 information~~		
~~CHOICE TFCS representation~~		~~Addition~~
~~TFCS addition information~~		
~~CHOICE CTFC Size~~		~~Number of bits used must be enough to cover all combinations of CTFC from clause 6.~~
~~CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~Power offset information~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual DL CCTrCH information~~		~~Not Present~~
~~jDeleted DL TrCH information~~	~~A1, A2, A3, A6~~	~~Not Present~~
~~Deleted DL TrCH information~~	~~A4~~	
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~12~~
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~13~~
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~14~~
~~Deleted DL TrCH information~~	~~A5~~	
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~6~~
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~10~~

Added or Reconfigured DL TrCH information	A1	
Downlink transport channel type		DCH
Transport channel identity		10
CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH Identity		5
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A2, A3, A4	
Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Independent
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Frequency info		
CHOICE mode		TDD
UARFCN (Nt)		Reference to TS34.108 clause 6
Maximum allowed UL TX power		30dBm

CHOICE channel requirement	A1, A2, A3, A4	Uplink DPCH info
-Uplink DPCH power control info		
CHOICE mode		TDD
UL Target SIR		Reference to TS34.108
CHOICE UL OL PC info		Individually signalled
CHOICE TDD option		1.28 Mcps TDD
TPC step size		1 dB
Primary CCPCH Tx Power		Reference to TS34.108
CHOICE mode		TDD
- Uplink Timing Advance Control		Not Present
UL CCTrCH List		
TFCS ID		1
Time info		
Activation time		(256+CFN-(CFNmod 8 + 8))MOD256
Duration		infinite
Common timeslot info		
2nd interleaving mode		Reference to TS34.108 clause 6 Parameter Set.
TFCI coding		Reference to TS34.108 clause 6 Parameter Set
Puncturing Limit		Reference to TS34.108 clause 6 Parameter Set
Repetition Period		1
Repetition Length		Empty
Uplink DPCH timeslots and codes		
First timeslot information		
- CHOICE TDD option		1.28 Mcps
Timeslot number		The number of an uplink timeslot that has unassigned codes.
TFCI existence		TRUE
Midamble shift and burst type		
CHOICE TDD option		1.28 Mcps
Midamble Allocation Mode		Default
Midamble configuration		16
CHOICE TDD option		1.28 Mcps
Modulation		QPSK
SS TPC Symbols		1

First timeslot code list		Repeated (1,2) for each channelisation code that is assigned in the slot.
Channelisation Code		(i/SF) where i denotes the code that is being assigned and SF is specified in TS34.108 clause 6 Parameter Set.
CHOICE more timeslots		The presence of this IE depends on number of resources specified in TS34.108 section 6 and whether they are being assigned in more than one timeslot.
CHOICE channel requirement	A5, A6	Not Present
CHOICE Mode		TDD
Downlink information common for all radio links	A1, A2, A4	
Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN-targetSFN frame offset		Not Present
Downlink DPCH power control information		
CHOICE mode		TDD
TPC Step Size		1
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Default DPCH Offset Value		Not Present
Downlink information for each radio link	A1, A2, A3, A4	
Downlink information for each radio links		
CHOICE mode		TDD
Primary CCPCH info		
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Cell parameters ID		0
Block STTD indicator		FALSE
Downlink DPCH info for each RL		
CHOICE mode		TDD
DL CCTrCH List		
TFCS ID		1
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256

~~Duration~~		~~Infinite~~
~~Common timeslot info~~		
~~2nd interleaving mode~~		~~Reference to TS34.108~~
~~TFCI coding~~		~~TRUE~~
~~Puncturing limit~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Repetition period~~		~~1~~
~~Repetition length~~		~~Empty~~
~~Downlink DPCH timeslots and codes~~		
~~Individual timeslot info~~		
~~Timeslot number~~		~~The number of a downlink timeslot that has unassigned codes~~
~~TFCI existence~~		~~TRUE~~
~~Midamble shift and burst type~~		
~~CHOICE TDD option~~		~~1.28 Mcps~~
~~Midamble allocation mode~~		~~Default~~
~~Midamble configuration~~		~~16~~
~~CHOICE TDD option~~		~~1.28 Mcps TDD~~
~~Modulation~~		~~QPSK~~
~~SS TPC Symbols~~		~~1~~
~~First timeslot channelisation codes~~		
~~First channelisation code~~		~~(i/SF) where i is the lowest numbered code assigned within the timeslot and SF is specified in TS34.108 clause 6 Parameter Set.~~
~~Last channelisation code~~		~~(j/SF) where j is the highest numbered code assigned in the timeslot.~~
~~Bitmap~~		~~Bitmap of the codes assigned in this timeslot.~~
~~CHOICE more timeslots~~		~~The presence of this IE depends upon slot allocations used in the test.~~
~~Secondary CCPCH info~~		~~Not Present~~
~~Downlink information for each radio link~~	~~A5, A6~~	
~~Choice mode~~		~~TDD~~
~~Primary CCPCH info~~		
~~CHOICE mode~~		~~TDD~~
~~CHOICE TDD option~~		~~1.28 Mcps TDD~~
~~TSTD indicator~~		~~TRUE~~
~~Cell parameters ID~~		~~0~~

~~Block STTD indicator~~		~~TRUE~~
~~Downlink DPCH info for each RL~~		~~Not present~~
~~SCCPCH information for FACH~~		~~Not present~~

~~Condition~~	~~Explanation~~
~~A1~~	~~This IE need for "Non speech in CS"~~
~~A2~~	~~This IE need for "Speech in CS"~~
~~A3~~	~~This IE need for "Packet to CELL_DCH from CELL_DCH in PS"~~
~~A4~~	~~This IE need for "Packet to CELL_DCH from CELL_FACH in PS"~~
~~A5~~	~~This IE need for "Packet to CELL_FACH from CELL_DCH in PS"~~
~~A6~~	~~This IE need for "Packet to CELL_FACH from CELL_FACH in PS"~~

~~Contents of RADIO BEARER RECONFIGURATION COMPLETE message: AM~~

~~Information Element~~	~~Value/remark~~
~~Message Type~~	
~~RRC transaction identifier~~	~~Checked to see if the value is identical to the same IE in the downlink RADIO BEARER RECONFIGURATION COMPLETE message~~
~~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.~~
~~Uplink integrity protection activation info~~	~~Not checked~~
~~CHOICE mode~~	~~TDD~~
~~CHOICE TDD option~~	~~1.28 Mcps~~
~~COUNT-C activation time~~	~~The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC TM and (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.~~
~~Radio bearer uplink ciphering activation time info~~	~~Not checked~~
~~Uplink counter synchronisation info~~	~~Not checked~~

~~Contents of RADIO BEARER RELEASE message: AM or UM (The others of speech in CS)~~

~~Information Element~~	~~Value/remark~~

Message Type	
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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State indicator	CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RAB information to reconfigure list	Not Present
RB information to release	
- RB identity	10
RB information to be affected	(UM DCCH for RRC)
- RB identity	1
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL DCH Transport channel identity	10

~~Logical channel identity~~	~~1~~
~~RB information to be affected~~	~~(AM DCCH for RRC)~~
~~RB identity~~	~~2~~
~~RB mapping info~~	
~~Information for each multiplexing option~~	
~~RLC logical channel mapping indicator~~	~~Not Present~~
~~Number of uplink RLC logical channels~~	~~1~~
~~Uplink transport channel type~~	~~DCH~~
~~UL Transport channel identity~~	~~5~~
~~Logical channel identity~~	~~2~~
~~CHOICE RLC size list~~	~~All~~
~~MAC logical channel priority~~	~~2~~
~~Downlink RLC logical channel info~~	
~~Number of downlink RLC logical channels~~	~~1~~
~~Downlink transport channel type~~	~~DCH~~
~~DL DCH Transport channel identity~~	~~10~~
~~Logical channel identity~~	~~2~~
~~RB information to be affected~~	~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~	~~3~~
~~RB mapping info~~	
~~Information for each multiplexing option~~	
~~RLC logical channel mapping indicator~~	~~Not Present~~
~~Number of uplink RLC logical channels~~	~~1~~
~~Uplink transport channel type~~	~~DCH~~
~~UL Transport channel identity~~	~~5~~
~~Logical channel identity~~	~~3~~
~~CHOICE RLC size list~~	~~All~~
~~MAC logical channel priority~~	~~3~~
~~Downlink RLC logical channel info~~	
~~Number of downlink RLC logical channels~~	~~1~~
~~Downlink transport channel type~~	~~DCH~~
~~DL DCH Transport channel identity~~	~~10~~
~~Logical channel identity~~	~~3~~
~~RB information to be affected~~	~~(AM DCCH for NAS_DT Low priority)~~

RB identity	4
RB mapping info	
Information for each multiplexing option	
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	DCH
UL Transport channel identity	5
Logical channel identity	4
CHOICE RLC size list	All
MAC logical channel priority	4
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	DCH
DL DCH Transport channel identity	10
Logical channel identity	4
Downlink counter synchronisation info	Not Present
UL Transport channel information for all transport channels	
PRACH TFCS	Not Present
CHOICE mode	TDD
Individual UL CCTrCH information	
TFCS ID	1
Shared channel indicator	FALSE
UL TFCS	
CHOICE TFCI signalling	Normal
TFCI Field 1 information	
CHOICE TFCI representation	Addition
TFCS addition information	
CHOICE CTFC Size	Refer to TS34.108 clause 6
CTFC information	Refer to TS34.108 clause 6 Parameter Set
TFC subset	
CHOICE Subset representation	Allowed transport format combination list
Allowed Transport Format combination list	Refer to TS34.108 clause 6 Parameter Set
Deleted UL TrCH Information	
Transport channel identity	1

Added or Reconfigured UL TrCH information	If TrCH reconfiguration is executed then this is needed(e.g. The rate of SRB for DCCH is changed.).
Uplink transport channel type	DCH
UL Transport channel identity	5
TFS	
CHOICE Transport channel type	Dedicated transport channels
Dynamic Transport format information	(This IE is repeated for TFI number)
RLC Size	Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List	(This IE is repeated for TFI number.)
Transmission Time Interval	Not Present
Number of Transport blocks	Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list	ALL
Semi-static Transport Format information	
Transmission time interval	Reference to TS34.108 clause 6 Parameter Set
Type of channel coding	Reference to TS34.108 clause 6 Parameter Set
Coding Rate	Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute	Reference to TS34.108 clause 6 Parameter Set
CRC size	Reference to TS34.108 clause 6 Parameter Set
CHOICE mode	TDD
DL Transport channel information common for all transport channel	
SCCPCH TFCS	Not Present
CHOICE mode	TDD
Individual DL CCTrCH information	
DL TFCS Identity	
TFCS ID	1
Shared Channel Indicator	FALSE
CHOICE DL parameters	Independent
DL TFCS	
CHOICE TFCI signalling	Normal
TFCI Field 1 Information	
CHOICE TFCI representation	Addition
TFCS addition information	
CHOICE CTFC size	Refer to TS34.108 clause 6

~~CTFC information~~	~~Refer to TS34.108 clause 6 Parameter Set~~
~~Deleted DL TrCH Information~~	
~~Transport channel identity~~	~~6~~
~~Added or Reconfigured DL TrCH information~~	~~If TrCH reconfiguration is executed then this is needed(e.g. The rate of SRB for DCCH is changed.).~~
~~Downlink transport channel type~~	~~DCH~~
~~DL Transport channel identity~~	~~10~~
~~CHOICE DL parameters~~	~~Independent~~
~~TFS~~	
~~CHOICE Transport channel type~~	~~Dedicated transport channels~~
~~Dynamic Transport format information~~	~~(This IE is repeated for TFI number)~~
~~RLC Size~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~Number of TBs and TTI List~~	~~(This IE is repeated for TFI number.)~~
~~Transmission Time Interval~~	~~Not Present~~
~~Number of Transport blocks~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~CHOICE Logical Channel list~~	~~ALL~~
~~Semi-static Transport Format information~~	
~~Transmission time interval~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~Type of channel coding~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~Coding Rate~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~Rate matching attribute~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~CRC size~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~DCH quality target~~	
~~BLER Quality value~~	~~-6.3~~
~~Transparent mode signalling info~~	~~Not Present~~
~~Frequency info~~	
~~CHOICE mode~~	~~TDD~~
~~UARFCN (Nt)~~	~~Reference to TS34.108 clause 6 Parameter Set~~
~~Maximum allowed UL TX power~~	~~30dBm~~
~~Uplink DPCH info~~	
~~CHOICE mode~~	~~TDD~~
~~Uplink DPCH power control info~~	
~~UL Target SIR~~	~~Reference to TS34.108~~
~~CHOICE UL OL PC info~~	~~Individually signalled~~
~~CHOICE TDD option~~	~~1.28 Mcps TDD~~

- TPC step size	1
Primary CCPCH Tx Power	Reference to TS34.108
CHOICE mode	TDD
Uplink Timing Advance Control	Not Present
UL CCTrCH List	
TFCS ID	1
Time info	
Activation time	(256+CFN (CFN MOD 8 + 8) MOD 256
Duration	Infinite
Common timeslot info	
2nd interleaving mode	Reference to TS34.108 clause 6 Parameter Set .
TFCI coding	Reference to TS34.108 clause 6 Parameter Set.
Puncturing Limit	Reference to TS34.108 clause 6 Parameter Set.
Repetition Period	Reference to TS34.108 clause 6 Parameter Set.
Repetition Length	Reference to TS34.108 clause 6 Parameter Set.
Uplink DPCH timeslots and codes	
First timeslot information	
CHOICE TDD option	1.28 Mcps
Timeslot number	The number of an uplink timeslot that has unassigned codes.
TFCI existence	TRUE
Midamble shift and burst type	
CHOICE TDD option	1.28 Mcps
Midamble Allocation Mode	Default
- Midamble configuration	16
CHOICE TDD option	1.28 Mcps
Modulation	QPSK
SS TPC Symbols	1
- First timeslot code list	Repeated (1,2) for each channelisation code that is assigned in the timeslot.
Channelisation Code	(i/SF) where i denotes an unassigned code and SF is specified in TS34.108 clause 6 Parameter Set.
CHOICE more timeslots	The presence of this IE depends on number of resources specified in TS34.108 section 6 and whether they are assigned in more than one timeslot.
CHOICE Mode	TDD

Downlink information common for all radio links	
———— Downlink DPCH info common for all RL	
———— Timing indicator	Maintain
———— CFN-targetSFN frame offset	Not Present
———— Downlink DPCH power control information	
———— CHOICE mode	TDD
———— TPC Step Size	1
———— CHOICE mode	TDD
———— CHOICE TDD option	1.28 Mcps
———— TSTD indicator	TRUE
———— Default DPCH Offset Value	0
Downlink information for each radio link list	
———— Downlink information for each radio links	
———— CHOICE mode	TDD
———— Primary CCPCH info	
———— CHOICE mode	TDD
———— CHOICE TDD option	1.28 Mcps
———— TSTD indicator	TRUE
———— Cell parameters ID	0
———— Block STTD indicator	FALSE
———— Downlink DPCH info for each RL	
———— CHOICE mode	TDD
———— DL CCTrCH List	
———— TFCS ID	1
———— Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
———— Duration	Infinite
———— Common timeslot info	
———— 2nd Interleaving mode	Reference to TS34.108 clause 6 Parameter Set
———— TFCI coding	Reference to TS34.108 clause 6 Parameter Set
———— Puncturing limit	Reference to TS34.108 clause 6 Parameter Set
———— Repetition period	1
———— Repetition length	Empty
———— Downlink DPCH timeslots and codes	
———— Individual timeslot info	

──────── Timeslot number	The number of a downlink timeslot that has unassigned codes.
──────── TFCI existence	TRUE
──────── Midamble shift and burst type	
──────── CHOICE TDD option	1.28 Mcps
──────── Midamble allocation mode	Default
──────── Midamble configuration	16
──────── CHOICE TDD option	1.28 Mcps TDD
──────── Modulation	QPSK
──────── SS TPC Symbols	1
──────── First timeslot channelisation codes	
──────── First channelisation code	(i/SF) where i is the lowest numbered unused code that is assigned in the timeslot and SF is specified in TS34.108 Parameter Set.
──────── Last channelisation code	(j/SF) where j is the highest numbered code that is assigned in the timeslot.
──────── Bitmap	Bitmap of codes assigned in the slot.
──────── CHOICE more timeslots	The presence of this IE depends upon whether the resources specified in the TS34.108 clause 6 Parameter Set require the use of more than one timeslot.
──────── Secondary CCPCH info	Not Present

Contents of RADIO BEARER RELEASE message: AM or UM (Speech in CS)

Information Element		**Value/remark**
Message Type		
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.
Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present

New C RNTI		Not Present
RRC State indicator	A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_FACH
UTRAN DRX cycle length coefficient		Not Present
CN information info		Not Present
Signalling Connection release indication		Not Present
URA identity		Not Present
RAB information to reconfigure list		Not Present
RB information to release	A2	
──── RB identity		10
RB information to release	A2	
──── RB identity		11
RB information to release	A2	
──── RB identity		12
RB information to release	A3, A4, A5, A6	
──── RB identity		20
RB information to release	A4	
──── RB identity		6
RB information to release	A4	
──── RB identity		7
RB information to be affected	A2, A3, A4	(UM DCCH for RRC)
──── RB identity		1
──── RB mapping info		
──── Information for each multiplexing option		
──── RLC logical channel mapping indicator		Not Present
──── Number of uplink RLC logical channels		1
──── Uplink transport channel type		DCH
──── UL Transport channel identity		5
──── Logical channel identity		1
──── CHOICE RLC size list		All
──── MAC logical channel priority		1
──── Downlink RLC logical channel info		
──── Number of downlink RLC logical channels		1

Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		1
RB information to be affected	A2, A3, A4	(AM DCCH for RRC)
RB identity		2
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		5
Logical channel identity		2
CHOICE RLC size list		All
MAC logical channel priority		2
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10
Logical channel identity		2
RB information to be affected	A2, A3, A4	(AM DCCH for NAS_DT High priority)
RB identity		3
RB mapping info		
Information for each multiplexing option		
RLC logical channel mapping indicator		Not Present
Number of uplink RLC logical channels		1
Uplink transport channel type		DCH
UL Transport channel identity		5
Logical channel identity		3
CHOICE RLC size list		All
MAC logical channel priority		3
Downlink RLC logical channel info		
Number of downlink RLC logical channels		1
Downlink transport channel type		DCH
DL DCH Transport channel identity		10

~~Logical channel identity~~		~~3~~
~~RB information to be affected~~	~~A2, A3, A4~~	~~(AM DCCH for NAS_DT Low priority)~~
~~RB identity~~		~~4~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~DCH~~
~~UL Transport channel identity~~		~~5~~
~~Logical channel identity~~		~~4~~
~~CHOICE RLC size list~~		~~All~~
~~MAC logical channel priority~~		~~4~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~DCH~~
~~DL DCH Transport channel identity~~		~~10~~
~~Logical channel identity~~		~~4~~
~~RB information to be affected~~	~~A5, A6~~	~~(UM DCCH for RRC)~~
~~RB identity~~		~~1~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~RACH~~
~~Logical channel identity~~		~~1~~
~~CHOICE RLC size list~~		~~Explicit list~~
~~RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~MAC logical channel priority~~		~~2~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH~~
~~Logical channel identity~~		~~1~~
~~RB information to be affected~~	~~A5, A6~~	~~(AM DCCH for RRC)~~
~~RB identity~~		~~2~~

~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~RACH~~
~~Logical channel identity~~		~~2~~
~~CHOICE RLC size list~~		~~Explicit list~~
~~RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~MAC logical channel priority~~		~~3~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH~~
~~Logical channel identity~~		~~2~~
~~RB information to be affected~~	~~A5, A6~~	~~(AM DCCH for NAS_DT High priority)~~
~~RB identity~~		~~3~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~
~~Number of uplink RLC logical channels~~		~~1~~
~~Uplink transport channel type~~		~~RACH~~
~~Logical channel identity~~		~~3~~
~~CHOICE RLC size list~~		~~Explicit list~~
~~RLC size index~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~MAC logical channel priority~~		~~4~~
~~Downlink RLC logical channel info~~		
~~Number of downlink RLC logical channels~~		~~1~~
~~Downlink transport channel type~~		~~FACH~~
~~Logical channel identity~~		~~3~~
~~RB information to be affected~~	~~A5, A6~~	~~(AM DCCH for NAS_DT Low priority)~~
~~RB identity~~		~~4~~
~~RB mapping info~~		
~~Information for each multiplexing option~~		
~~RLC logical channel mapping indicator~~		~~Not Present~~

— Number of uplink RLC logical channels		1
— Uplink transport channel type		RACH
— Logical channel identity		4
— CHOICE RLC size list		Explicit list
— RLC size index		Reference to TS34.108 clause 6 Parameter Set
— MAC logical channel priority		5
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		FACH
— DL Transport channel identity		1
— Logical channel identity		4
RB information to be affected	A5, A6	(TM BCCH for RRC)
— RB identity		6
— RB mapping info		
— Information for each multiplexing option		
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		FACH
— Logical channel identity		5
RB information to be affected	A5, A6	(TM PCCH for RRC)
— RB identity		7
— RB mapping info		
— Information for each multiplexing option		
— Downlink RLC logical channel info		
— Number of downlink RLC logical channels		1
— Downlink transport channel type		PCH
— Logical channel identity		1
Downlink counter synchronisation info		Not Present
UL Transport channel information for all transport channels	A2, A4	
— PRACH TFCS		Not Present
— CHOICE mode		TDD
— Individual UL CCTrCH information		
— TFCS ID		1

~~- Shared channel indicator~~		~~FALSE~~
~~- UL TFCS~~		
~~- CHOICE TFCI signalling~~		~~Normal~~
~~- TFCI Field 1 information~~		
~~- CHOICE TFCS representation~~		~~Addition~~
~~- TFCS addition information~~		
~~- CHOICE CTFC Size~~		~~Refer to TS34.108 clause 6~~
~~- CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~- TFC subset~~		
~~- CHOICE Subset representation~~		~~Allowed transport format combination list~~
~~- Allowed Transport Format combination list~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~UL Transport channel information for all transport channels~~	~~A3~~	
~~- PRACH TFCS~~		~~Not Present~~
~~- CHOICE mode~~		~~TDD~~
~~- Individual UL CCTrCH information~~		
~~- TFCS ID~~		~~1~~
~~- Shared channel indicator~~		~~FALSE~~
~~- UL TFCS~~		
~~- CHOICE TFCI signalling~~		~~Normal~~
~~- TFCI Field 1 information~~		
~~- CHOICE TFCS representation~~		~~Addition~~
~~- TFCS addition information~~		
~~- CHOICE CTFC Size~~		~~Refer to TS34.108 clause 6~~
~~- CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~- TFC subset~~		
~~- CHOICE Subset representation~~		~~Allowed transport format combination list~~
~~- Allowed Transport Format combination list~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~UL Transport channel information for all transport channels~~	~~A5, A6~~	
~~- PRACH TFCS~~		
~~- CHOICE TFCI signalling~~		~~Normal~~
~~- TFCI Field 1 information~~		
~~- CHOICE TFCS representation~~		~~Addition~~
~~- TFCS addition information~~		

CHOICE CTFC Size		Refer to TS34.108 clause 6
CTFC information		Refer to TS34.108 clause 6 Parameter Set
CHOICE mode		TDD
Individual UL CCTrCH information		Not Present
Deleted UL TrCH Information	A2, A5	
Uplink transport channel type		DCH
Transport channel identity		1
Deleted UL TrCH Information	A2	
Uplink transport channel type		DCH
Transport channel identity		2
Deleted UL TrCH Information	A2	
Uplink transport channel type		DCH
Transport channel identity		3
Deleted UL TrCH Information	A3	
Uplink transport channel type		DCH
Transport channel identity		6
Added or Reconfigured UL TrCH information	A2, A3, A4	If TrCH reconfiguration is executed then this is needed(e.g. The rate of SRB for DCCH is changed.).
Uplink transport channel type		DCH
UL Transport channel identity		5
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter

		Set
―――― Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
―――― CRC size		Reference to TS34.108 clause 6 Parameter Set
DL Transport channel information common for all transport channel	A2, A3, A4	
―――― SCCPCH TFCS		Not Present
―――― CHOICE mode		TDD
―――― Individual DL CCTrCH information		
―――― DL TFCS Identity		
―――― TFCS ID		1
―――― Shared Channel Indicator		FALSE
―――― CHOICE DL parameters		Independent
―――― DL TFCS		
―――― CHOICE TFCI signalling		Normal
―――― TFCI Field 1 Information		
―――― CHOICE TFCI representation		Addition
―――― TFCS addition information		
―――― CHOICE CTFC size		Refer to TS34.108 clause 6
―――― CTFC information		Refer to TS34.108 clause 6 Parameter Set
DL Transport channel information common for all transport channel	A5, A6	
―――― SCCPCH TFCS		(This IE is repeated for TFC number.)
―――― CHOICE TFCI signalling		Normal
―――― TFCI Field 1 information		
―――― CHOICE TFCS representation		Addition
―――― TFCS addition information		
―――― CHOICE CTFC Size		Number of bits used must be enough to cover all combinations of CTFC from clauses 6.
―――― CTFC information		Refer to TS34.108 clause 6 Parameter Set
―――― Power offset information		Not Present
―――― CHOICE mode		TDD
―――― Individual DL CCTrCH information		Not Present
Deleted DL TrCH Information	A2, A3, A5	
―――― Downlink transport channel type		DCH

~~- Transport channel identity~~		~~6~~
~~Deleted DL TrCH Information~~	~~A2~~	
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~7~~
~~Deleted DL TrCH Information~~	~~A2~~	
~~Downlink transport channel type~~		~~DCH~~
~~Transport channel identity~~		~~8~~
~~Added or Reconfigured DL TrCH information~~	~~A2, A3, A4~~	~~If TrCH reconfiguration is executed then this is needed(e.g. The rate of SRB for DCCH is changed.).~~
~~Downlink transport channel type~~		~~DCH~~
~~DL Transport channel identity~~		~~10~~
~~CHOICE DL parameters~~		~~Independent~~
~~TFS~~		
~~- CHOICE Transport channel type~~		~~Dedicated transport channels~~
~~Dynamic Transport format information~~		~~(This IE is repeated for TFI number)~~
~~RLC Size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Number of TBs and TTI List~~		~~(This IE is repeated for TFI number.)~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of Transport blocks~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CHOICE Logical Channel list~~		~~ALL~~
~~- Semi-static Transport Format information~~		
~~Transmission time interval~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Type of channel coding~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Coding Rate~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~DCH quality target~~		
~~BLER Quality value~~		~~-6.3~~
~~Transparent mode signalling info~~		~~Not Present~~
~~Frequency info~~		

- CHOICE mode		TDD
UARFCN (Nt)		Reference to TS34.108 clause 6 Parameter Set
Maximum allowed UL TX power		30dBm
CHOICE channel requirement	A2, A2, A4	Uplink DPCH info
Uplink DPCH power control info		
CHOICE mode		TDD
UL Target SIR		Reference to TS34.108
CHOICE UL OL PC info		Individually signalled
CHOICE TDD option		1.28 Mcps TDD
TPC step size		1
- Primary CCPCH Tx Power		Reference to TS34.108
CHOICE mode		TDD
Uplink Timing Advance Control		Not Present
UL CCTrCH List		
TFCS ID		1
Time info		
Activation time		(256+CFN-(CFNmod 8 + 8))MOD256
Duration		Infinite
Common timeslot info		
- 2nd interleaving mode		Reference to TS34.108 clause 6.
TFCI coding		Reference to TS34.108 clause 6.
Repetition Period		1
Repetition Length		Empty
Uplink DPCH timeslots and codes		
First timeslot information		
CHOICE TDD option		1.28 Mcps
Timeslot number		The number of an uplink timeslot that has unassigned codes.
TFCI existence		TRUE
- Midamble shift and burst type		
CHOICE TDD option		1.28 Mcps
Midamble Allocation Mode		Default
Midamble configuration		16
CHOICE TDD option		1.28 Mcps

~~Modulation~~		~~QPSK~~
~~SS-TPC Symbols~~		~~1~~
~~First timeslot code list~~		~~Repeated (1,2) for each channelisation code that is assigned in the slot.~~
~~Channelisation Code~~		~~(i/SF) where i denotes the code that is being assigned and SF is specified in TS34.108 clause 6 Parameter Set.~~
~~CHOICE more timeslots~~		~~The presence of this IE depends on the number of resources specified in TS34.108 section 6 and whether they are assigned in more than one timeslot.~~
~~CHOICE Mode~~		~~TDD~~
~~Downlink information common for all radio links~~	~~A2, A3, A4~~	
~~- Downlink DPCH info common for all RL~~		
~~Timing indicator~~		~~Maintain~~
~~CFN-targetSFN frame offset~~		~~Not Present~~
~~Downlink DPCH power control information~~		
~~CHOICE mode~~		~~TDD~~
~~TPC Step Size~~		~~1~~
~~CHOICE mode~~		~~TDD~~
~~CHOICE TDD option~~		~~1.28 Mcps~~
~~TSTD indicator~~		~~TRUE~~
~~- Default DPCH Offset Value~~		~~Not Present~~
~~Downlink information for each radio link list~~	~~A2, A3, A4~~	
~~Downlink information for each radio links~~		
~~CHOICE mode~~		~~TDD~~
~~Primary CCPCH info~~		
~~CHOICE mode~~		~~TDD~~
~~CHOICE TDD option~~		~~1.28 Mcps~~
~~TSTD indicator~~		~~TRUE~~
~~Cell parameters ID~~		~~0~~
~~Block STTD indicator~~		~~FALSE~~
~~Downlink DPCH info for each RL~~		
~~CHOICE mode~~		~~TDD~~
~~DL CCTrCH List~~		
~~TFCS ID~~		~~1~~
~~Activation time~~		~~(256+CFN-(CFN MOD 8 + 8))MOD 256~~

──────── Duration		Infinite
──────── Common timeslot info		
──────── 2nd Interleaving mode		Reference to TS34.108 clause 6
──────── TFCI coding		Reference to TS34.108 clause 6
──────── Puncturing limit		Reference to TS34.108 clause 6
──────── Repetition period		1
──────── Repetition length		Empty
──────── Downlink DPCH timeslots and codes		
──────── Individual timeslot info		
──────── Timeslot number		The number of a downlink timeslot that has unassigned codes.
──────── TFCI existence		TRUE
──────── Midamble shift and burst type		
──────── CHOICE TDD option		1.28 Mcps
──────── Midamble allocation mode		Default
──────── Midamble configuration		16
──────── CHOICE TDD option		1.28 Mcps TDD
──────── Modulation		QPSK
──────── SS TPC Symbols		1
──────── First timeslot channelisation codes		
──────── First channelisation code		(i/SF) where i is the lowest numbered code assigned in the timeslot and SF is specified in TS34.108 clause 6 arameter Set.
──────── Last channelisation code		(j/SF) where j is the highest numbered code assigned in the timeslot.
──────── Bitmap		Bitmap of the codes assigned in the timeslot.
──────── CHOICE more timeslots		The presence of this IE depends upon the number of resources required by the TS34.108 clause 6 Parameter Set and whether they are assigned using more than one timeslot.
──────── Secondary CCPCH info		Not Present
Downlink information common for all radio links	A5, A6	
──────── Downlink information for each radio link		
──────── Choice mode		TDD
──────── Primary CCPCH info		
──────── CHOICE mode		TDD
──────── CHOICE TDD option		1.28 Mcps TDD

———— TSTD indicator		TRUE
———— Cell parameters ID		0
———— Block STTD indicator		FALSE
——— Downlink DPCH info for each RL		Not present
——— SCCPCH information for FACH		Not present

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of UTRAN MOBILITY INFORMATION message: AM or UM

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 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.
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
New U-RNTI	See the test content
New C-RNTI	See the test content
UE Timers and constants in connected mode	
———— T301	2000 milliseconds
———— N301	2
———— T302	4000 milliseconds
———— N302	3
———— T304	1000 milliseconds

N304	3
T305	60 minutes
T307	50 seconds
T308	320 milliseconds
T309	8 seconds
T310	320 milliseconds
N310	5
T311	500 milliseconds
T312	5 seconds
N312	200
T313	10 seconds
N313	200
T314	20 seconds
T315	30 seconds
N315	200
T316	50 seconds
T317	1800 seconds
CN information info	Not Present
URA identity	Not present
Downlink counter synchronisation info	Not Present

Contents of UTRAN MOBILITY INFORMATION CONFIRM message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if it matches the value of the same IE in downlink UTRAN MOBILITY INFORMATION message
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.
Uplink integrity protection activation info	Not checked
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC TM, (b)

	UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of RRC CONNECTION REJECT message: UM

Information Element	Value/remark
Message Type	
Initial UE identity	Set to the UE's IMSI (GSM-MAP) or TMSI.
RRC transaction identifier	Arbitrarily selects an integer between 0 and 3
Rejection cause	Unspecified
Wait Time	0
Redirection info	Not Present

Contents of RRC CONNECTION SETUP message: UM (Transition to CELL_FACH)

Information Element	Value/remark
Message Type	
Initial UE identity	Reference to TS34.108 clause 6 Parameter Set
RRC transaction identifier	Arbitrarily select a integer between 0 and 3
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	
SRNC identity	0000 0000 0001B
S-RNTI	0000 0000 0000 0000 0001B
New C-RNTI	0000 0000 0000 0001B
RRC state indicator	CELL_FACH
UTRAN DRX cycle length coefficient	5 (2 to 12)
Capability update requirement	
UE radio access FDD capability update requirement	FALSE
UE radio access 3.84Mcps TDD capability update requirement	FALSE
UE radio access 1.28Mcps TDD capability update requirement	FALSE
System specific capability update requirement	Not Present
Signalling RB information to setup	(UM DCCH for RRC)
RB identity	1

- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	UM RLC
- Transmission RLC discard	
- SDU discard mode	Max DAT retransmissions
- MAX_DAT	4
- Timer_MRW	100
- MaxMRW	4
- CHOICE Downlink RLC mode	UM RLC
- RB mapping info	
- Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
- Number of uplink RLC logical channels	1
- Uplink transport channel type	RACH
- Logical channel identity	1
- CHOICE RLC size list	Explicit list
- RLC size index	Reference to TS34.108 clause 6 Parameter Set
- MAC logical channel priority	2
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	1
Signalling RB information to setup	(AM DCCH for RRC)
- RB identity	2
- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	AM RLC
- Transmission RLC discard	
- SDU discard mode	Max DAT retransmissions
- MAX_DAT	4
- Timer_MRW	100
- MaxMRW	4
- Transmission window size	8
- Timer_RST	500
- Max_RST	4
- Polling info	

Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
- CHOICE Downlink RLC mode	AM RLC
In sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	
Timer_status_prohibit	200
Timer_EPC	200
Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	
- RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
Logical channel identity	2
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	3
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
- Logical channel identity	2
Signalling RB information to setup	(AM DCCH for NAS_DT High priority)
RB identity	3
CHOICE RLC info type	RLC info
CHOICE Uplink RLC mode	AM RLC
Transmission RLC discard	
SDU discard mode	Max DAT retransmissions
MAX_DAT	4
Timer_MRW	100

MaxMRW	4
Transmission window size	8
Timer_RST	500
Max_RST	4
Polling info	
Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
CHOICE Downlink RLC mode	AM RLC
In sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	
Timer_status_prohibit	200
Timer_EPC	200
Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
Logical channel identity	3
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	4
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1
Downlink transport channel type	FACH
Logical channel identity	3
Signalling RB information to setup	(AM DCCH for NAS_DT Low priority)
RB identity	4
CHOICE RLC info type	RLC info

CHOICE Uplink RLC mode	AM RLC
Transmission RLC discard	
SDU discard mode	Max DAT retransmissions
MAX_DAT	4
Timer_MRW	100
MaxMRW	4
Transmission window size	8
Timer_RST	500
Max_RST	4
Polling info	
Timer_poll_prohibit	200
Timer_poll	200
Poll_SDU	1
Last transmission PDU poll	TRUE
Last retransmission PDU poll	TRUE
Poll_Windows	99
CHOICE Downlink RLC mode	AM RLC
In sequence delivery	TRUE
Receiving window size	8
Downlink RLC status info	
Timer_status_prohibit	200
Timer_EPC	200
Missing PDU indicator	TRUE
RB mapping info	
Information for each multiplexing option	
RLC logical channel mapping indicator	Not Present
Number of uplink RLC logical channels	1
Uplink transport channel type	RACH
Logical channel identity	4
CHOICE RLC size list	Explicit list
RLC size index	Reference to TS34.108 clause 6 Parameter Set
MAC logical channel priority	5
Downlink RLC logical channel info	
Number of downlink RLC logical channels	1

—— Downlink transport channel type	FACH
—— Logical channel identity	4
UL Transport channel information for all transport channels	
—— TFC subset	(This IE is repeated for TFC number.)
—— Allowed Transport Format combination	0 to MaxTFCValue-1 (MaxTFCValue is refer to TS34.108 clause 6 Parameter Set.)
—— PRACH TFCS	Not Present
—— CHOICE mode	FDD
—— UL DCH TFCS	Not Present
Added or Reconfigured UL TrCH information	
—— Transport channel identity	15
—— TFS	
—— CHOICE Transport channel type	Common transport channels
—— Dynamic Transport format information	(This IE is repeated for TFI number)
—— RLC Size	Reference to TS34.108 clause 6 Parameter Set
—— Number of TBs and TTI List	(This IE is repeated for TFI number.)
—— Number of Transport blocks	Reference to TS34.108 clause 6 Parameter Set
—— CHOICE mode	TDD
—— CHOICE Logical Channel List	ALL
—— Semi-static Transport Format information	
—— Transmission time interval	Reference to TS34.108 clause 6 Parameter Set
—— Type of channel coding	Reference to TS34.108 clause 6 Parameter Set
—— Coding Rate	Reference to TS34.108 clause 6 Parameter Set
—— Rate matching attribute	Reference to TS34.108 clause 6 Parameter Set
—— CRC size	Reference to TS34.108 clause 6 Parameter Set
DL Transport channel information common for all transport channel	
—— SCCPCH TFCS	(This IE is repeated for TFC number.)
—— CHOICE TFCI signalling	Normal
—— TFCI Field 1 information	
—— CHOICE CTFC representation	Complete
TFCS complete reconfigure information	
—— CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.
—— CTFC information	Refer to TS34.108 clause 6 Parameter Set

Power offset information	Not Present
CHOICE DL parameters	Independent
DL DCH TFCS	Not Present
Frequency info	
UARFCN uplink(Nu)	Reference to TS34.108 clause 6 Parameter Set
UARFCN downlink(Nd)	Reference to TS34.108 clause 6 Parameter Set
Maximum allowed UL TX power	30dBm
CHOICE channel requirement	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio link list	
Downlink information for each radio link	
Choice mode	TDD
Primary CPICH info	Set to the default value of cell 1.
PDSCH with SHO DCH info	Not Present
PDSCH code mapping	Not Present
Downlink DPCH info for each RL	Not present
Secondary CCPCH info	
Primary CPICH usage for channel estimation	Primary CPICH may be used
Secondary CPICH info	Not Present
Secondary scrambling code	Not Present
STTD indicator	FALSE
Spreading factor	Reference to clause 6 Parameter Set
Code number	SF-1(SF is reference to clause 6 Parameter Set)
Pilot symbol existence	FALSE
TFCI existence	TRUE
Fixed or Flexible position	Flexible
Timing offset	0
References to system information blocks	Not present

Contents of RRC STATUS message: AM

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.
Identification of received message	Not Present
—— Received message type	
—— RRC transaction identifier	
Protocol error information	
—— Protocol error cause	Value will be checked.

Contents of SECURITY MODE FAILURE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is the identical to the same IE in the downlink SECURITY MODE COMMAND message.
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.
Failure cause	Value will be checked

Contents of TRANSPORT CHANNEL RECONFIGURATION message: AM or UM

Information Element	Condition	Value/remark
Message Type		
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.

Integrity protection mode info		Not Present
Ciphering mode info		Not Present
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI		Not Present
New C-RNTI		Not Present
RRC State indicator	A1, A2, A3, A4	CELL_DCH
RRC State indicator	A5, A6	CELL_DCH should this be CELL_FACH ??? because it indicates the state that is to be entered.
UTRAN DRX cycle length coefficient		Not Present
CN information info		Not Present
URA identity		Not Present
Downlink counter synchronisation info		Not Present
UL Transport channel information for all transport channels	A1, A2, A3, A4	
PRACH TFCS		Not Present
CHOICE mode		TDD
Individual UL CCTrCH information		
- TFCS ID		1
Shared channel indicator		FALSE
UL TFCS		
CHOICE TFCI signalling		Normal
- TFCI Field 1 information		
CHOICE TFCS representation		Addition
TFCS addition information		
CHOICE CTFC Size		Refer to TS34.108 clause 6
CTFC information		Refer to TS34.108 clause 6 Parameter Set
TFC subset		
CHOICE Subset representation		Allowed transport format combination list
Allowed Transport Format combination list		Refer to TS34.108 clause 6 Parameter Set
UL Transport channel information for all transport channels	A5, A6	
PRACH TFCS		
CHOICE TFCI signalling		Normal
TFCI Field 1 information		

CHOICE TFCS representation		Addition
TFCS addition information		
CHOICE CTFC Size		Refer to TS34.108 clause 6
CTFC information		Refer to TS34.108 clause 6 Parameter Set
CHOICE mode		TDD
Individual UL CCTrCH information		Not Present
Added or Reconfigured UL TrCH information	A1, A2, A3, A4	
Uplink transport channel type		DCH
UL Transport channel identity		5
TFS		
CHOICE Transport channel type		Dedicated transport channels
- Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel List		ALL
Semi-static Transport Format information		
- Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
- Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
Added or Reconfigured UL TrCH information	A4	
- Uplink transport channel type		DCH
UL Transport channel identity		1
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter

		~~Set~~
~~Number of TBs and TTI List~~		~~(This IE is repeated for TFI number.)~~
~~Transmission Time Interval~~		~~Not Present~~
~~Number of Transport blocks~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CHOICE Logical Channel list~~		~~ALL~~
~~Semi-static Transport Format information~~		
~~Transmission time interval~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Type of channel coding~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Coding Rate~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~Rate matching attribute~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~CRC size~~		~~Reference to TS34.108 clause 6 Parameter Set~~
~~DL Transport channel information common for all transport channel~~	~~A1, A2, A3, A4~~	
~~SCCPCH TFCS~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual DL CCTrCH information~~		
~~DL TFCS Identity~~		
~~TFCS ID~~		~~1~~
~~Shared Channel Indicator~~		~~FALSE~~
~~CHOICE DL parameters~~		~~Independent~~
~~DL TFCS~~		
~~CHOICE TFCI signalling~~		~~Normal~~
~~TFCI Field 1 Information~~		
~~CHOICE TFCI representation~~		~~Addition~~
~~TFCS addition information~~		
~~CHOICE CTFC size~~		~~Refer to TS34.108 clause 6~~
~~CTFC information~~		~~Refer to TS34.108 clause 6 Parameter Set~~
~~DL Transport channel information common for all transport channel~~	~~A5, A6~~	
~~SCCPCH TFCS~~		~~Not Present~~
~~CHOICE mode~~		~~TDD~~
~~Individual DL CCTrCH information~~		~~Not Present~~

Added or Reconfigured DL TrCH information	A1, A2	
- Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Same as UL
Uplink transport channel type		DCH
UL TrCH Identity		5
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A3, A4	
Downlink transport channel type		DCH
DL Transport channel identity		10
CHOICE DL parameters		Independent
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
- Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
DCH quality target		
BLER Quality value		-6.3

Transparent mode signalling info		Not Present
Added or Reconfigured DL TrCH information	A4	
Downlink transport channel type		DCH
DL Transport channel identity		6
CHOICE DL parameters		Independent
TFS		
CHOICE Transport channel type		Dedicated transport channels
Dynamic Transport format information		(This IE is repeated for TFI number)
RLC Size		Reference to TS34.108 clause 6 Parameter Set
Number of TBs and TTI List		(This IE is repeated for TFI number.)
Transmission Time Interval		Not Present
Number of Transport blocks		Reference to TS34.108 clause 6 Parameter Set
CHOICE Logical Channel list		ALL
Semi-static Transport Format information		
Transmission time interval		Reference to TS34.108 clause 6 Parameter Set
Type of channel coding		Reference to TS34.108 clause 6 Parameter Set
Coding Rate		Reference to TS34.108 clause 6 Parameter Set
Rate matching attribute		Reference to TS34.108 clause 6 Parameter Set
CRC size		Reference to TS34.108 clause 6 Parameter Set
DCH quality target		
BLER Quality value		-6.3
Transparent mode signalling info		Not Present
Frequency info		
CHOICE mode		TDD
UARFCN (Nt)		Reference to TS34.108 clause 6
Maximum allowed UL TX power		30dBm
CHOICE channel requirement	A1, A2, A3, A4	Uplink DPCH info
Uplink DPCH power control info		
CHOICE mode		TDD
UL Target SIR		Refrence to TS34.108

—————— CHOICE UL OL PC info		Individually signalled
—————— CHOICE TDD option		1.28 Mcps TDD
—————— TPC step size		1
—————— Primary CCPCH Tx Power		Reference to TS34.108
———— CHOICE mode		TDD
———— Uplink Timing Advance Control		Not Present
———— UL CCTrCH List		
———— TFCS ID		1
———— Time info		
—————— Activation time		(256+CFN-(CFNmod 8 + 8))mod 256
—————— Duration		Infinite
———— Common timeslot info		
—————— 2nd interleaving mode		Reference to TS34.108 clause 6 Parameter Set
—————— TFCI coding		Reference to TS34.108 clause 6 Parameter Set
—————— Repetition Period		1
—————— Repetition Length		Empty
———— Uplink DPCH timeslots and codes		
———— First timeslot information		
—————— CHOICE TDD option		1.28 Mcps
—————— Timeslot number		The number of an uplink timeslot that has unassigned codes.
—————— TFCI existence		TRUE
—————— Midamble shift and burst type		
—————— CHOICE TDD option		1.28 Mcps
—————— Midamble Allocation Mode		Default
—————— Midamble configuration		16
—————— CHOICE TDD option		1.28 Mcps
—————— Modulation		QPSK
—————— SS TPC Symbols		1
———— First timeslot code list		Repeated (1,2) for each code that is assigned within the timeslot.
—————— Channelisation Code		(i/SF) where i denotes the number of the assigned code and SF is specified in TS34.108 clause 6 Parameter Set.
—————— CHOICE more timeslots		The presence of this IE depends on number of resources specified in TS34.108 section 6

		and whether they are assigned in more than one slot.
CHOICE Mode		TDD
Downlink information common for all radio links	A1, A2, A3, A4	
Downlink DPCH info common for all RL		
Timing indicator		Maintain
CFN targetSFN frame offset		Not Present
Downlink DPCH power control information		
CHOICE mode		TDD
TPC Step Size		1
CHOICE mode		TDD
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		TRUE
Default DPCH Offset Value		0
Downlink information for each radio link list	A1, A2, A3, A4	
Downlink information for each radio links		
CHOICE mode		TDD
Primary CCPCH info		
CHOICE mode		TDD
CHOICE TDD option		1.28 Mcps
TSTD indicator		FALSE
Cell parameters ID		0
Block STTD indicator		FALSE
Downlink DPCH info for each RL		
CHOICE mode		TDD
DL CCTrCH List		
TFCS ID		1
Activation time		(256+CFN-(CFN MOD 8 + 8))MOD 256
Duration		Infinite
Common timeslot info		
2nd Interleaving mode		Reference to TS34.108 clause 6
TFCI coding		Reference to TS34.108 clause 6
Puncturing limit		Reference to TS34.108 clause 6

~~Repetition period~~		~~1~~
~~Repetition length~~		~~Empty~~
~~Downlink DPCH timeslots and codes~~		
~~Individual timeslot info~~		
~~Timeslot number~~		~~The number of a downlink timeslot that has unassigned codes.~~
~~- TFCI existence~~		~~TRUE~~
~~Midamble shift and burst type~~		
~~CHOICE TDD option~~		~~1.28 Mcps~~
~~Midamble allocation mode~~		~~Default~~
~~Midamble configuration~~		~~16~~
~~CHOICE TDD option~~		~~1.28 Mcps TDD~~
~~Modulation~~		~~QPSK~~
~~SS-TPC Symbols~~		~~1~~
~~First timeslot channelisation codes~~		
~~- First channelisation code~~		~~(i/SF) where i is the lowest numbered code assigned within the slot and SF is specified in the TS34.108 clause 6 Parameter Set..~~
~~Last channelisation code~~		~~(j/SF) where j is the highest numbered code assigned in the timeslot.~~
~~Bitmap~~		~~Bitmap of codes assigned in the timeslot.~~
~~- CHOICE more timeslots~~		~~The presence of this IE depends upon the number of resources required by the TS34.108 clause 6 Parameter Set and whether thay are allocated in more than one slot.~~
~~Secondary CCPCH info~~		~~Not Present~~
~~Downlink information for each radio link list~~	~~A5, A6~~	
~~Downlink information for each radio link~~		
~~Choice mode~~		~~TDD~~
~~Primary CCPCH info~~		~~Set to the default value of cell 1.~~
~~- CHOICE mode~~		~~TDD~~
~~CHOICE TDD option~~		~~1.28 Mcps TDD~~
~~TSTD indicator~~		~~TRUE~~
~~Cell parameters ID~~		~~0~~
~~Block STTD indicator~~		~~TRUE~~
~~Downlink DPCH info for each RL~~		~~Not present~~
~~SCCPCH information for FACH~~		~~Not present~~

Condition	Explanation
A1	This IE need for "Non speech in CS"
A2	This IE need for "Speech in CS"
A3	This IE need for "Packet to CELL_DCH from CELL_DCH in PS"
A4	This IE need for "Packet to CELL_DCH from CELL_FACH in PS"
A5	This IE need for "Packet to CELL_FACH from CELL_DCH in PS"
A6	This IE need for "Packet to CELL_FACH from CELL_FACH in PS"

Contents of TRANSPORT CHANNEL RECONFIGURATION COMPLETE message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink TRANSPORT CHANNEL RECONFIGURATION message
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.
Uplink integrity protection activation info	Not checked
CHOICE mode	TDD
- CHOICE TDD option	1.28 Mcps
COUNT-C activation time	The presence of this IE depends on the following 2 factors: (a) There exists RB(s) mapped to RLC-TM and (b) UE is transiting to CELL_DCH state after the reconfiguration procedure. Else, this IE is absent.
Radio bearer uplink ciphering activation time info	Not checked
Uplink counter synchronisation info	Not checked

Contents of TRANSPORT FORMAT COMBINATION CONTROL message: AM or UM (in CELL_DCH)

Information Element	Value/remark
Message Type	
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.
CHOICE mode	TDD
TFCS Id	1
Shared Channel Indicator	FALSE
DPCH TFCS in Uplink	
Minimu allowed Transport format combination index	0 (The TFC is constructed from ALL TF0)

Contents of UE CAPABILITY ENQUIRY message: AM or UM

Information Element	Value/remark
Message Type	
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.
Capability update requirement	
UE radio access FDD capability update requirement	FALSE
UE radio access 3.84 Mcps TDD capability update requirement	FALSE
UE radio access 1.28 Mcps TDD capability update requirement	TRUE
System specific capability update requirement list	UE only supports 1 system
System specific capability update requirement	GSM

Contents of UE CAPABILITY INFORMATION message: AM

Information Element	Value/remark
Message Type	
RRC transaction identifier	Checked to see if the value is identical to the same IE in the downlink UE CAPABILITY ENQUIRY message.
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.
UE radio access capability	Value will be checked. Stated capability must be compatible with 34.123-2 (ICS statements) and the user settings
ICS Version	
PDCP Capability	
RLC Capability	
Transport channel capability	
RF Capability	
Physical channel capability	
UE multi-mode/multi-RAT capability	
Security capability	
UE positioning capability	
Measurement capability	
UE system specific capability	
Inter-RAT UE radio access capability	Choice and value will be checked. UE must include the classmark information for the supported RAT

Contents of UE CAPABILITY INFORMATION CONFIRM message: UM

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 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.

Contents of URA UPDATE message: TM

Information Element	**Value/remark**
Message Type	
U-RNTI	

SRNC identity	0000 0000 0001B
S RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Checked to see if it is absent
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.
URA update cause	See the test content
Protocol error indicator	Checked to see if it is absent or set to 'FALSE'
Protocol error information	Checked to see if it is absent

Contents of URA UPDATE CONFIRM message: UM

Information Element	Value/remark
Message Type	
U-RNTI	If this message is sent on CCCH, use the following values. Else, this IE is absent.
SRNC identity	0000 0000 0001B
S RNTI	0000 0000 0000 0000 0001B
RRC transaction identifier	Arbitrarily selects and 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.
Integrity protection mode info	Not Present
Ciphering mode info	Not Present
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present

URA identity	See the test content
Downlink counter synchronisation info	Not Present

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

T1-020333

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020243r1

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** CR **208** | ⌘ **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 **X**   Radio Access Network ☐   Core Network ☐

| **Title:** | ⌘ | Addition of generic test procedure to Annex C of TS 34.123-1 |
| **Source:** | ⌘ | MCI |

| **Work item code:** ⌘ | TEI | | **Date:** ⌘ | 23rd May 2002 |

| **Category:** | ⌘ | **F** | | **Release:** ⌘ | REL-4 |

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

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

| **Reason for change:** | ⌘ | This CR is introduced to include methods to test the UE's state in the test cases. |

| **Summary of change:** ⌘ | New clause is added to test UE in idle mode state, CELL_FACH state, CELL_DCH state, CELL_PCH state and URA_PCH state. |
| | | This proposal has been proposed as T1S-020134 in T1/SIG #22 meeting. In this document, changes to T1S-020134 are been highlighted in blue. |

| **Consequences if not approved:** | ⌘ | The test prose cannot test UE effectively. |

| **Clauses affected:** | ⌘ | |

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

| **Other comments:** | ⌘ | Affects R'99 and R'4 UE test cases. |

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

Annex C (Normative): Generic Test Procedures to Check UE's State

This section described procedures to check the state of UE. These procedures will only be used in the final step of all RRC test cases. All procedures described in this section shall return an indication to the calling test entity whether or not the UE is in the designated state. In order to use these procedures, the test entity shall call for the test procedure in the test sequence. The test entity shall use the following syntax to call for the desire test procedure:

Call [*test procedure index*]

where the values of *test procedure index* are defined as:-

C.1 indicates generic test procedure to test that UE is in Idle Mode state.
C.2 indicates generic test procedure to test that UE is in CELL_FACH state.
C.3 indicates generic test procedure to test that UE is in CELL_DCH state.
C.4 indicates generic test procedure to test that UE is in CELL_PCH state.
C.5 indicates generic test procedure to test that UE is in URA_PCH state.

C.1 Verify that UE is in Idle Mode State

C.1.1 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.
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> perform an RRC connection establishment procedure;

    …

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists...

Upon initiation of the procedure, the UE shall:
    …

    1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;

    …

C.1.2 Reference

3GPP TS 25.331 clause 8.1.2.3, 8.1.3.2 and 8.1.8.2.

C.1.3 Test purpose

To test the UE is in idle mode state by confirming that UE responds with RRC CONNECTION REQUEST message after SS pages UE using UE's CN domain identity.

Test Procedure

SS sends a PAGING TYPE 1 using CN domain identity. If UE is in idle mode state, UE shall respond with RRC CONNECTION REQUEST message. Then SS shall transmit RRC CONNECTION SETUP message to request UE to move to CELL_DCH. UE shall configure the delicated channels and then transmit RRC CONNECTION SETUP COMPLETE message. UE shall then transmit INITIAL DIRECT TRANSFER message. Then SS transmit RRC CONNECTION RELEASE message to UE. UE shall transmit RRC CONNECTION RELEASE COMPLETE message to SS.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	PAGING TYPE 1 (PCCH)	Using CN domain identity as stored in the TEST USIM
2	→		RRC CONNECTION REQUEST (CCCH)	
3		←	RRC CONNECTION SETUP (CCCH)	Transit to CELL_DCH state
4	→		RRC CONNECTION SETUP COMPLETE (DCCH)	
5	→		INITIAL DIRECT TRANSFER (DCCH)	RR (PAGING RESPONSE) Or GMM (Service Request)
6		←	RRC CONNECTION RELEASE (DCCH)	
7	→		RRC CONNECTION RELEASE COMPLETE (DCCH)	The UE shall enter idle state.

Specific message contents

None

C.1.4 Test result

If the UE transmits a RRC CONNECTION SETUP message in step 2, the UE is in idle mode state prior to the start of this test procedure, otherwise UE is not in idle mode state.

C.2 Verify that UE is in CELL_FACH State

C.2.1 Conformance requirement

The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL_DCH and CELL_FACH. When the UE receives the first RRC CONNECTION RELEASE message; and

1> if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

1> if the message is received on DCCH:

the UE shall:

1> in state CELL_FACH:

2> if the RRC CONNECTION RELEASE message was received on the DCCH:

3> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;

3> submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using AM RLC on the DCCH to the UTRAN.

3> when the successful transmission of the RRC CONNECTION RELEASE COMPLETE message has been confirmed by the lower layers:

4> release all its radio resources; and

> > 4> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers; and
>
> > 4> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
>
> > 4> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
>
> > 4> clear the variable ESTABLISHED_RABS;
>
> > 4> pass the value of the IE "Release cause" received in the RRC CONNECTION RELEASE message to upper layers;
>
> > 4> enter idle mode;
>
> > 4> perform the actions specified in TS 25.331 subclause 8.5.2 when entering idle mode.
>
> 3> and the procedure ends.

C.2.2 Reference

3GPP TS 25.331 clause 8.1.4.3.

C.2.3 Test purpose

To test that the UE is in CELL_FACH state by confirming that UE transmits RRC CONNECTION RELEASE COMPLETE using AM RLC on the UL DCCH when it receives a RRC CONNECTION RELEASE sent by SS using UM RLC on the DL DCCH.

Test Procedure

SS sends an RRC CONNECTION RELEASE using UM RLC on the DL DCCH. UE shall respond with RRC CONNECTION RELEASE COMPLETE using AM RLC on the UL DCCH

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		←	RRC CONNECTION RELEASE (DCCH)	
2		→	RRC CONNECTION RELEASE COMPLETE (DCCH-AM)	The UE shall enter idle state.

Specific message contents

None

C.2.4 Test result

If UE transmits a RRC CONNECTION RELEASE COMPLETE message using AM RLC in step 2, the UE is in CELL_FACH state prior to the start of this procedure, otherwise, the UE is not in CELL_FACH state.

C.3 Verify that UE is in CELL_DCH State

C.3.1 Conformance requirement

The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL_DCH and CELL_FACH. When the UE receives the first RRC CONNECTION RELEASE message; and

> 1> if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or

> 1> if the message is received on DCCH:

the UE shall:

1> in state CELL_DCH:

   2> initialise the counter V308 to zero;

   2> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;

   2> submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using UM RLC on the DCCH to the UTRAN;

   2> if the IE "Rplmn information" is present:

      3> the UE may:

         4> store the IE on the ME together with the PLMN id for which it applies;

      3> the UE may then:

         4> utilise this information, typically indicating where a number of BCCH frequency ranges of a RAT may be expected to be found, during subsequent Rplmn selections of the indicated PLMN.

   2> start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.

C.3.2   Reference

3GPP TS 25.331 clause 8.1.4.3.

C.3.3   Test purpose

To test that the UE is in CELL_DCH state by confirming that UE transmits RRC CONNECTION RELEASE COMPLETE using UM RLC on the UL DCCH when it receives a RRC CONNECTION RELEASE sent by SS using UM RLC on the DL DCCH.

Test Procedure

SS sends an RRC CONNECTION RELEASE using UM RLC on the DL DCCH. UE shall respond with RRC CONNECTION RELEASE COMPLETE using UM RLC on the UL DCCH.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		RRC CONNECTION RELEASE (DCCH)	
2	→		RRC CONNECTION RELEASE COMPLETE (DCCH-UM)	The UE shall enter idle state.

Specific message contents

None

C.3.4   Test result

If UE transmits a RRC CONNECTION RELEASE COMPLETE message using UM RLC in step 2, the UE is in CELL_DCH state prior to the start of this procedure, otherwise, the UE is not in CELL_DCH state.

C.4   Verify that UE is in CELL_PCH State

C.4.1   Conformance requirement

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:
   1> URA reselection:

2> if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2 …

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	

…

A UE in idle mode, CELL_PCH state or URA_PCH state shall receive the paging information for all its monitored paging occasions. 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".

2> ignore any other remaining IE "Paging record" that may be present in the message.

1> otherwise:

2> ignore that paging record.

C.4.2 Reference

3GPP TS 25.331 clause 7.2.2, 8.3.1.2, 8.1.1.1.2.

C.4.3 Test purpose

To confirm that the UE does not read SIB 2 when it receives a PAGING TYPE 1 message that notifies the UE about the modification of the system information.
Subsequently, to confirm that the UE performs a cell update procedure after receiving a PAGING TYPE 1 message containing UE's UTRAN identity.

Test Procedure

Firstly, SS shall modify the URA identity in the SIB 2. Then SS shall transmit a PAGING TYPE 1 message to UE to notify UE of the modification of the system information. Then SS wait for x seconds to see if UE send any uplink messages. Next SS shall transmit a PAGING TYPE 1 message to page UE. UE shall transmit a CELL UPDATE message. When SS receives the CELL UPDATE message, SS sends RRC CONNECTION RELEASE message to UE on downlink CCCH.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 2	SS changes the URA identity to be different from the one stored in the UE.
2	←		PAGING TYPE 1	If UE replies to this message, the test fails. SS monitors the uplink activities for 15 s(See Note).
3	←		PAGING TYPE 1	This message contains the UTRAN identity of the UE.
4	→		CELL UPDATE	Check that the cell update cause is set to "paging response".
5	←		RRC CONNECTION RELEASE (CCCH)	

Note: The SS shall wait until UE can read all SIBs and can listen to the PCCH on the paging occasion.
SIB Repetition (1280 ms in TS34.108) * 2 + Maximum DRX cycle length(2^9 * 10 ms) * 2 = 2.56 + 10.24 < 15 s

Specific message contents

System Information Block type 2 (Step 1)

- URA identity list	
- URA identity	Set to a value different from the one store in the UE.

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	Not Present
- MIB Value Tag	2
- BCCH modification time	Not Present

PAGING TYPE 1 (Step 3)

Information Element	Value/remark
Message Type	
Paging record list	
- Paging record	
- CHOICE Used paging identity	UTRAN identity
- U-RNTI	Same as the identity of the UE.
- CN originated page to connected mode UE	Not Present
BCCH modification info	Not Present

CELL UPDATE (Step 4)

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

RRC CONNECTION RELEASE (Step 5)

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

C.4.4   Test result

After step 2, the UE shall not transmit URA UPDATE message to indicate to the SS of the change in the URA identity, otherwise the UE is not is CELL_PCH state.

After step 3, the UE shall transmit CELL UPDATE message with cell update cause set to "paging response" to SS, otherwise the UE is not is CELL_PCH state.

C.5 <mark>Verify that UE is in URA_PCH State</mark>

C.5.1 Conformance requirement

A UE in URA_PCH state shall initiate the URA update procedure in the following cases:
   1> URA reselection:

   3>   if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2 …

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	

C.5.2 Reference

3GPP TS 25.331 clause 7.2.2, 8.3.1.2, 8.1.1.1.2.

C.5.3 Test purpose

<mark>To confirm that the UE reads SIB 2 when it receives a PAGING TYPE 1 message that notifies the UE about the modification of the system information.</mark>

<mark>Test Procedure</mark>

<mark>Firstly, SS shall modify the URA identity in the SIB 2. Then SS shall transmit a PAGING TYPE 1 message to UE to notify UE of the modification of the system information. UE shall transmit a URA UPDATE message. When SS receives the URA UPDATE message, SS sends RRC CONNECTION RELEASE message to UE on downlink CCCH.</mark>

<mark>Expected sequence</mark>

Step	Direction UE	Direction SS	Message	Comments
1		←	SYSTEM INFORMATION BLOCK TYPE 2	SS changes the URA identity to be different from the one stored in the UE.
2		←	PAGING TYPE 1	
3	→		URA UPDATE	Check that the URA update cause is set to "change of URA".
4		←	RRC CONNECTION RELEASE (CCCH)	

Specific message contents

System Information Block type 2 (Step 1)

- URA identity list	
- URA identity	Set to a value different from the one store in the UE.

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Message Type	
Paging record list	Not Present
BCCH modification info	Not Present
- MIB Value Tag	2
- BCCH modification time	Not Present

URA UPDATE (Step 3)

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

RRC CONNECTION RELEASE (Step 4)

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

C.5.4   Test result

After step 2, the UE shall transmit URA UPDATE message with URA update cause set to "change of URA" to SS, otherwise the UE is not is URA_PCH state.

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

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1-020334

T1S-020249

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** CR **209** | ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Additional test cases according to T1S-020098 Hard Handover
Source:	⌘	NTT DoCoMo, MCI
Work item code:	⌘ TEI	***Date:*** ⌘ 10th May 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:	⌘	This CR arise from T1S-020098 discussed in T1-Sig #21

Summary of change: ⌘ Following new hard handover test cases are added:
1. Transport channel reconfiguration from CELL_DCH to CELL_DCH with uplink transmission rate modification
2. Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH with hard handover to another frequency with timing maintain
3. Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH with modify uplink physical channel rate

Consequences if ⌘ Above hard handover on the available combinations of individual functions which
not approved: operator would use are not tested.

Clauses affected:	⌘	New clauses 8.2.4.X, 8.2.6.X

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

Other comments: ⌘ `Applicable to R99 and later releases`

How to create CRs using this form:
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Below is a brief summary:

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

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

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

8.2.4.24 Transport channel reconfiguration from CELL_DCH to CELL_DCH: Success with uplink transmission rate modification

8.2.4.24.1 Definition

8.2.4.24.2 Conformance requirement

If the UE receives:
- a TRANSPORT CHANNEL RECONFIGURATION message:

it shall:

1> perform the physical layer synchronisation procedure as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
1> enter a state according to TS25.331 subclause 8.6.3.3.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:
1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:
1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6

8.2.4.24.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message **on the uplink DCCH using AM RLC** after reconfigure its available uplink TFC according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.24.4 Method of test

Initial Condition

System Simulator: 1 cell
UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108.

The UE is in CELL_DCH state of cell 1. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE to modify the transmission rate. This message includes a new uplink transport channel information in order to restricts available uplink TFC within assigned uplink TFCS. The UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC after reconfiguring its transport channel parameters. Next the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE which includes a new uplink transport channel information in order to reconfigure uplink TFCS. The UE transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC after reconfiguring its transport channel parameters according to the TRANSPORT CHANNEL RECONFIGURATION message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state of cell 1.
2	←		TRANSPORT CHANNEL RECONFIGURATION	This message includes the IE"TFC subset" and don't include UL/DL physical channel information.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
4	←		TRANSPORT CHANNEL RECONFIGURATION	
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
UL Transport channel information for all transport channels	
- CHOICE mode	FDD
- TFC subset	
- CHOICE Subset representation	Allowed transport format combination list
- Allowed transport format combination	Indicate TFCs which are a part of the TFCS defined in this message to restrict uplink allowed TFC subset.
- UL DCH TFCS	Same contents as a RADIO BEARER SETUP message used in initial procedure.
CHOICE channel requirement	Not present
Downlink information per radio link list	Not present

TRANSPORT CHANNEL RECONFIGURATION (Step 4)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
UL Transport channel information for all transport channels	
- CHOICE mode	FDD
- TFC subset	
- UL DCH TFCS	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
CHOICE channel requirement	Uplink DPCH info
- Uplink DPCH power control info	Same contents as a RADIO BEARER SETUP message used in initial procedure
- CHOICE mode	FDD
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
- Number of FBI bit	Not Present
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
Downlink information per radio link list	Not present

8.2.4.24.5 Test requirement

After step 2 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.
After step 4 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

>>>Next change<<<

8.2.6.23 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (Hard handover to another frequency with timing maintain): Success

8.2.6.23.1 Definition

8.2.6.23.2 Conformance requirement

If the UE receives:
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

    1> perform the physical layer synchronisation procedure as specified in TS25.214;

    1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
    1> enter a state according to TS25.331 subclause 8.6.3.3.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:
    1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

    1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:
    1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

    1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.6.23.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC, on **a dedicated physical channel in a different frequency band.**

8.2.6.23.4 Method of test

Initial Condition

System Simulator: 2 cells–Cells 1 is active and cell 6 is inactive.
UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending to the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.6.23

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-55	Off	-55

Table 8.2.6.23 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.23. The SS switches its downlink transmission power settings to columns "T1" and transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes new frequency information and IE "Timing indicator" set to maintain. The UE shall reconfigure the physical channel parameters according to PHYSICAL CHANNEL RECONFIGURATION message and establish a radio link with the SS using a dedicated physical channel in cell 6. The UE then transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message in cell 6 on the uplink DCCH AM RLC after its transition.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.23.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.6.23.
3	←		PHYSICAL CHANNEL RECONFIGURATION	Including new frequency information. IE "Timing indicator" is set to maintain.
4				The UE remains in CELL_DCH state after connecting to the SS on a dedicated physical channel in cell 6.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE transmits this message in cell 6.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Speech in CS" or "Non speech in CS" or "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]
Uplink DPCH info	
- Scrambling code number	1
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Maintain
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	350

8.2.6.23.5 Test requirement

After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC in cell 6.

>>> Next change <<<

8.2.6.24 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (modify uplink physical channel rate): Success

8.2.6.24.1 Definition

8.2.6.24.2 Conformance requirement

If the UE receives:
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

1> perform the physical layer synchronisation procedure as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> enter a state according to TS25.331 subclause 8.6.3.3.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;

1> if the IE "Downlink information for each radio link" is absent, not change its current DL Physical channel configuration.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2 and 8.5 and 8.6

8.2.6.24.3 Test purpose

To confirm that the UE modifies uplink physical channel rate according to a PHYSICAL CHANNEL RECONFIGURATION message and transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message **on the uplink DCCH using AM RLC.**

8.2.6.24.4 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 of cell 1. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which assign a new UL puncture limit and minimum spreading factor to the UE to modify uplink physical channel rate. The UE shall reconfigure the physical channel according to this message and transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state of cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	This message is including new IE "Uplink DPCH info" and don't include IE "Downlink information for each radio link".
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type titled as "Packet to CELL_DCH from CELL_DCH in PS" as found in [9] TS 34.108 clause 9, with the following exceptions:

Information Element	Value/remark
CHOICE channel requirement	Uplink DPCH info
- Uplink DPCH power control info	Same contents as a RADIO BEARER SETUP message used in initial procedure
- CHOICE mode	FDD
- Scrambling code type	Long
- Scrambling code number	0 (0 to 16777215)
- Number of DPDCH	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
- TFCI existence	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
- Number of FBI bit	Not Present
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set Set different parameter which is included in a RADIO BEARER SETUP message used in initial procedure.
Downlink information per radio link list	Not present

8.2.6.24.5   Test requirement

After step 2 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

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

T1-020335

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020250r1

CR-Form-v6.1

CHANGE REQUEST

⌘ **TS 34.123-1 CR 210** ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title:	⌘	Additional test cases according to T1S-020099 State Transition
Source:	⌘	NTT DoCoMo, MCI
Work item code:	⌘ TEI	***Date:*** ⌘ 10th May 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: ⌘	This CR arise from T1S-020099 discussed in T1-Sig #21

Summary of change: ⌘ Following new state transition test cases are added:
1. RRC Connection Release in CELL_DCH state with frequency band modification
2. Radio Bearer Establishment for transition from CELL_DCH to CELL_FACH with frequency band modification
3. Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH with frequency band modification
4. Radio Bearer Release for transition from CELL_DCH to CELL_FACH with frequency band modification
5. Radio Bearer Release from CELL_DCH to CELL_PCH with frequency band modification
6. Transport channel reconfiguration from CELL_FACH to CELL_DCH with frequency band modification
7. Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH with frequency band modification
8. Physical Channel Reconfiguration from CELL_DCH to CELL_PCH with frequency band modification
9. Physical channel reconfiguration from CELL_FACH to CELL_PCH

Consequences if not approved: ⌘ Above state transition based on functions which operator would use are not tested.

Clauses affected: ⌘ New clauses 8.1.3.X, 8.2.1.X, 8.2.3.X, 8.2.4.X, 8.2.6.X

Other specs	⌘	☐ Other core specifications	⌘	
affected:		☐ Test specifications		
		☐ O&M Specifications		
Other comments:	⌘	Applicable to R99 and later releases		

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

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

8.1.3.6 RRC Connection Release in CELL_DCH state (Frequency band modification): Success

8.1.3.6.1 Definition

8.1.3.6.2 Conformance requirement

If the UE first receives an RRC CONNECTION RELEASE message in CELL_DCH state, it shall:
- initialize the counter V308 to zero;
- submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using UM RLC on the DCCH to the UTRAN;
- start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.

If the timer T308 expires, the UE shall:
- increment V308 by one;

- if V308 is equal to or smaller than N308:
  - retransmit the RRC CONNECTION RELEASE COMPLETE message;

- if V308 is greater than N308:
  - release all its radio resources;
  - enter idle mode;
  - perform cell-selection according to TS25.304;
  - procedure end;

Reference

3GPP TS 25.331 clause 8.1.4.

8.1.3.6.3 Test purpose

To confirm that when the UE receives an RRC CONNECTION RELEASE message the UE transmits N308+1 RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH.
To confirm that the UE enters into idle mode with performing cell-selection and selecting new cell configured by SS.

8.1.3.6.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive
UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE

Test Procedure

Table 8.1.3.6

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-55	Off	-55

Table 8.1.3.6 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution.
SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.1.3.6. The SS switches its downlink transmission power settings to columns "T1" and transmits MEASUREMENT CONTROL message and add cell 6 into the IE "inter-frequency cell info". The SS modify contents of SIB3 in cell 1 and cell 6. The SS transmits an RRC CONNECTION RELEASE message. After the SS transmits an RRC CONNECTION RELEASE message to the UE, the SS waits for the UE to transmit RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH and checks to see if N308+1 such messages has been received. The UE leaves connected mode and enters idle mode in cell 1. The UE shall perform cell reselection and camp on cell 6 after reading the system information. The SS calls for generic procedure C.3 to check that UE is in Idle state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.1.3.6.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.1.3.6.
3	←		MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4	←		System Information Block type 3	The SS modifies SIB 3 in cell 6.
5	←		System Information Block type 3	The SS modifies SIB 3 in cell 1 to indicate that the cell is barred.
6				The SS waits for 5 s.
7	←		RRC CONNECTION RELEASE	
8	→		RRC CONNECTION RELEASE COMPLETE	The SS waits for the arrival of N308+1 such messages send on UM RLC.
9				The UE releases signalling radio bearer and dedicated resources. Then the UE goes to idle mode in cell 1.
10				The UE select s cell 6 and camp on it.
11				The SS waits for 15 s after receiving the last RRC CONNECTION RELEASE COMPLETE message.
12	←→		CALL C.1	If the test result of C.1 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present
- Hysteresis	1.0 dB
- Time to trigger	10 [s]
- Reporting cell status	

Information Element	Value/remark
- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

System Information Block type 3 (Step 4)

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

Information Element	Value/remark
- Cell identity	0000 0000 0000 0000 0000 0000 0110B

System Information Block type 3 (Step 5)

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

Information Element	Value/remark
- Cell Access Restriction	
- Cell barred	Barred
- Intra-frequency cell re-selection indicator	Not allowed
- T_{barred}	10[s]
- Cell Reserved for operator use	Not reserved
- Cell Reservation Extension	Not reserved
- Access Class Barred List	
- Access Class Barred0	barred
- Access Class Barred1	barred
- Access Class Barred2	barred
- Access Class Barred3	barred
- Access Class Barred4	barred
- Access Class Barred5	barred
- Access Class Barred6	barred
- Access Class Barred7	barred
- Access Class Barred10	barred
- Access Class Barred11	barred
- Access Class Barred12	barred
- Access Class Barred13	barred
- Access Class Barred14	barred
- Access Class Barred15	barred

RRC CONNECTION RELEASE (Step 6)

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

Information Element	Value/remark
N308	Arbitrarily chosen between 1 and 8

8.1.3.6.5   Test requirement

After step 6 the UE shall start to transmit N308 + 1 times RRC CONNECTION RELEASE COMPLETE messages using UM on DCCH.
After step 11 the UE shall be in Idle mode in cell 6.

>>>Next change<<<

8.2.1.22 Radio Bearer Establishment for transition from CELL_DCH to CELL_FACH (Frequency band modification): Success

8.2.1.22.1 Definition

8.2.1.22.2 Conformance requirement

If the UE receives:

-a RADIO BEARER SETUP message;

it shall:

1>	act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
   1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:
   1> if the IE "Frequency info" is included in the received reconfiguration message:

   2> select a suitable UTRA cell according to TS5.304 on that frequency.

   1> if the IE "Frequency info" is not included in the received reconfiguration message:

   2> select a suitable UTRA cell according to TS5.304.

   1> if the received reconfiguration message included the IE "Primary CPICH info", and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" :

   2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Cell reselection";

   2> when the cell update procedure completed successfully:

      3> if the UE is in CELL_PCH or URA_PCH state:

         4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

         4> proceed as below.

1> select PRACH according to TS25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> use the transport format set given in system information;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

   2> ignore that IE and stop using DRX.

1> if the contents of the variable C_RNTI is empty:

   2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

   2> when the cell update procedure completed successfully:

      3> if the UE is in CELL_PCH or URA_PCH state:

         4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

         4> proceed as below.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.1.22.3   Test purpose

1. To confirm that the UE transits from CELL_DCH to CELL_FACH according to the RADIO BEARER SETUP message.
2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

8.2.1.22.4   Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.
UE: PS-DCCH_DCH (state 6-7) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.2.1.22

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.1.22 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS configures its downlink transmission power setting according to columns "T0" in table 8.2.1.22. The SS switches its downlink transmission power settings to columns "T1" and transmits MEASUREMENT CONTROL message in order for the UE to know information of cell 6. The SS transmits a RADIO BEARER SETUP message including new frequency information to the UE. After the UE receives this message, it transits from CELL_DCH in cell 1 to CELL_FACH state in cell 6, and transmits CELL UPDATE with IE "Cell_update_cause" set to "cell reselection". Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC in cell 6. The 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 initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.22.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.22.
3	←		MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4	←		RADIO BEARER SETUP	Including new frequency information.
5	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
6	←		CELL UPDATE CONFIRM	Including the IE" New C-RNTI"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	→		RADIO BEARER SETUP COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 or SIB6 after entering CELL FACH state in cell 6.
9	←→		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

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9 , with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present
- Hysteresis	1.0 dB
- Time to trigger	10 s
- Reporting cell status	

- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

RADIO BEARER SETUP (Step 4)

Use the message sub-type indicated as "Packet to CELL_FACH from CELL_DCH in PS" found in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6

CELL UPDATE (Step 5)

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

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

CELL UPDATE CONFIRM (Step 6)

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

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

UTRAN MOBILITY UPDATE CONFIRM (Step 7)

The contents of UTRAN MOBILITY UPDATE CONFIRM message is identical as "UTRAN MOBILITY UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9.

8.2.1.22.5   Test requirement

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH in cell 6.
After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 6.
After step 7 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.
After step 8 the UE shall be in CELL_FACH state of cell 6.

>>> **Next change <<<**

8.2.1.23 Radio Bearer Establishment for transition from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.1.23.1 Definition

8.2.1.23.2 Conformance requirement

If the UE receives:

  -a RADIO BEARER SETUP message;

it shall:

  1> perform the physical layer synchronisation procedure as specified in TS25.214;

  1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
  1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:
  1> remove any C-RNTI from MAC;

  1> clear the C_RNTI.

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:
  1> transmit a RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

  1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.1.23.3 Test purpose

  1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to the RADIO BEARER SETUP message.
  2. To confirm that the UE transmits RADIO BEARER SETUP COMPLETE message on the uplink DCCH using AM RLC on a dedicated physical channel in a different frequency.

8.2.1.23.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.
UE: CS-DCCH_FACH (state 6-6) or PS_DCCH_FACH (state 6-8) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.1.23

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-55	Off	-55

Table 8.2.1.23 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23. The SS switches its downlink transmission power settings to columns "T1" and transmits a RADIO BEARER SETUP message including new frequency information to the UE. After the UE receives this message, it configures them and establishes the required radio access bearers and moves into cell 6. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. The **SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.**

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.1.23.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.1.23.
3	←		RADIO BEARER SETUP	Including new frequency information.
4	→		RADIO BEARER SETUP COMPLETE	The UE sends this message in cell 6.
5	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical the message sub-type indicated by "Packet to CELL_DCH from CELL_FACH in PS" or "Non speech from CELL_FACH to CELL_DCH in CS" or "Speech from CELL_FACH to CELL_DCH in CS" in [9] TS 34.108 clause 9 , with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	350

8.2.1.23.5   Test requirement

After step 3 the UE shall transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC in cell 6.
After step 4 the UE shall be in CELL_DCH state of cell 6.

8.2.3.20 Radio Bearer Release for transition from CELL_DCH to CELL_FACH (Frequency band modification): Success

8.2.3.20.1 Definition

8.2.3.20.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RELEASE message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
    1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:
    1> if the IE "Frequency info" is included in the received reconfiguration message:

        2> select a suitable UTRA cell according to TS25.304 on that frequency.

    1> if the IE "Frequency info" is not included in the received reconfiguration message:

        2> select a suitable UTRA cell according to TS5.304.

    1> if the received reconfiguration message included the IE "Primary CPICH info"), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" :

        2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Cell reselection";

        2> when the cell update procedure completed successfully:

            3> if the UE is in CELL_PCH or URA_PCH state:

                4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

                4> proceed as below.

1> select PRACH according to TS25.331 subclause 8.5.17;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> use the transport format set given in system information;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

    2> ignore that IE and stop using DRX.

1> if the contents of the variable C_RNTI is empty:

    2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

    2> when the cell update procedure completed successfully:

        3> if the UE is in CELL_PCH or URA_PCH state:

            4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

            4> proceed as below.

In case the procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:
> 1> transmit a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

> 1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.3.20.3   Test purpose

1. To confirm that the UE transits from CELL_DCH to CELL_FACH according to the RADIO BEARER RELEASE message.

2. To confirm that the UE transmits RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency.

8.2.3.20.4   Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.
UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DTCH+DCCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending to the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.3.20

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.3.20 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.3.20. The SS switches its downlink transmission power settings to columns "T1" and then transmits MEASUREMENT CONTROL message in order for the UE to know information of cell 6. The SS transmits a RADIO BEARER RELEASE message including new frequency information to the UE. The UE releases the radio access bearer and moves into cell 6. The UE transmits CELL UPDATE message with IE "Cell update cause" set to "cell reselection". SS then transmit CELL UDPATE CONFIRM with IE "New C_RNTI". The UE shall respond with an UTRAN MOBILITY INFORMATION CONFIRM message, and then transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC. The 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 initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.3.20.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.3.20.
3	←		MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4	←		RADIO BEARER RELEASE	Including new frequency information.
5	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
6	←		CELL UPDATE CONFIRM	Including the IE" New C-RNTI"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	→		RADIO BEARER RELEASE COMPLETE	
9	←→		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

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present
- Hysteresis	1.0 dB
- Time to trigger	10 s
- Reporting cell status	

- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

RADIO BEARER RELEASE (Step 4)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" or "**Non speech to CELL_FACH from CELL_DCH in CS**" or "**Speech to CELL_FACH from CELL_DCH in CS**" in [9] TS 34.108 clause 9 with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6

CELL UPDATE (Step 5)

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

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

CELL UPDATE CONFIRM (Step 6)

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

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

UTRAN MOBILITY UPDATE CONFIRM (Step 7)

The contents of UTRAN MOBILITY UPDATE CONFIRM message is identical as "UTRAN MOBILITY UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9.

8.2.3.20.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH in cell 6.
After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 6.
After step 7 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC in cell 6.
After step 8 the UE shall be in CELL_FACH state of cell 6.

>>> Next change <<<

8.2.3.21 Radio Bearer Release from CELL_DCH to CELL_PCH (Frequency band modification): Success

8.2.3.21.1 Definition

8.2.3.21.2 Conformance requirement

If the UE receives:

-a RADIO BEARER RELEASE message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:
1> transmit a RADIO BEARER RELEASE COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters CELL_PCH state, the UE shall, after the state transition and transmission of the response message:
1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS25.331 subclause 8.6.3.2.

1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info, and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info:

2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure completed successfully:

3> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.3.21.3 Test purpose

1. To confirm that the UE transmits RADIO BEARER RELEASE COMPLETE message on the uplink DCCH

using AM RLC.

2. To confirm that the UE transits from CELL_DCH to CELL_PCH according to the RADIO BEARER RELEASE message.
3. To confirm that the UE releases the radio access bearer and selects a common physical channel in a different frequency indicated by SS.

8.2.3.21.4   Method of test

Initial Condition

System Simulator: 2 cells–Cells 1 is active and cell 6 is inactive.
UE: CS-DCCH+DTCH_DCH (state 6-9) or PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

Test Procedure

Table 8.2.3.21

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.3.21 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.3.21. The SS switches its downlink transmission power settings to columns "T1" transmits MEASUREMENT CONTROL message in order for the UE to know information of cell 6. The SS then transmits a RADIO BEARER RELEASE message including new frequency information. The UE transmits a RADIO BEARER RELEASE COMPLETE message using AM RLC and enters CELL_PCH state of cell 6, then the UE shall transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection", to complete the procedure. The SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

Expected sequence

Step	Direction UE	Direction SS	Message	Comment
1				The initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.3.21.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.3.21.
3		←	MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4		←	RADIO BEARER RELEASE	Including new frequency information.
5	→		RADIO BEARER RELEASE COMPLETE	The UE sends this message before it completes state transition. UE sends this message in cell 1.
6	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
7		←	CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
8				The SS waits for 5 s.
9	←→		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

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present
- Hysteresis	1.0 dB
- Time to trigger	10 s
- Reporting cell status	

- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

RADIO BEARER RELEASE (Step 4)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" or "Non speech to CELL_FACH from CELL_DCH in CS" or "Speech to CELL_FACH from CELL_DCH in CS" in [9] TS 34.108 clause 9, with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	
- UARFCN uplink (Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink (Nd)	Same downlink UARFCN as used for cell 6

CELL UPDATE (Step 6)

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

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

CELL UPDATE CONFIRM (Step 7)

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

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

8.2.3.18.5 Test requirement

After step 4 the UE shall transmit a RADIO BEARER RELEASE COMPLETE message on uplink DCCH using AM RLC in cell 1.

After step 5 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection" in cell 6.

After step 8 the UE shall be in CELL_PCH state in cell 6.

>>> Next change <<<

8.2.4.25 Transport channel reconfiguration from CELL_FACH to CELL_DCH (Frequency band modification): Success

8.2.4.25.1 Definition

8.2.4.25.2 Conformance requirement

If the UE receives:

  -a TRANSPORT CHANNEL RECONFIGURATION message;

it shall:

  1> perform the physical layer synchronisation procedure as specified in TS25.214;

  1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
  1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:
  1> remove any C-RNTI from MAC;

  1> clear the C_RNTI.

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:
  1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

  1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.4.25.3 Test purpose

  1. To confirm that the UE transits from CELL_FACH to CELL_DCH according to TRANSPORT CHANNEL RECONFIGURATION message.
  2. To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION message on the uplink DCCH using AM RLC on dedicated physical channel in a different frequency.

8.2.4.25.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.
UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.2.4.25

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-55	Off	-55

Table 8.2.4.25 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_FACH state of ce11 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.4.25. The SS switches its downlink transmission power settings to columns "T1" and transmits a TRANSPORT CHANNEL RECONFIGURATION message, which includes new frequency information leading to a state transition from CELL_FACH to CELL_DCH in cell 6. The UE shall reconfigure transport channel parameter and frequency band according to this message. Finally, the UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC in cell 6. The **SS calls for generic procedure C.3 to check that UE is in CELL_DCH state.**

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_FACH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.4.25.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.4.25.
3	←		TRANSPORT CHANNEL RECONFIGURATION	
4				Reconfiguration of transport channel.
5	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message in cell 6.
6	←→		CALL C.3	If the test result of C.3 indicates that UE is in CELL_DCH state, the test passes, otherwise it fails.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 3)

Use the message sub-type titled "Packet to CELL_DCH from CELL_FACH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6
Downlink information for each radio links	
- Primary CPICH info	
- Primary Scrambling Code	350

8.2.4.25.5   Test requirement

After step 4 the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the

DCCH using AM RLC in cell 6.
After step 5 the UE shall be in CELL_DCH state of cell 6.

>>> Next change <<<

8.2.6.25 Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH (Frequency band modification): Success

8.2.6.25.1 Definition

8.2.6.25.2 Conformance requirement

If the UE receives:

-a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.
   1> enter a state according to TS25.331 subclause 8.6.3.3.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:
   1> if the IE "Frequency info" is included in the received reconfiguration message:

      2> select a suitable UTRA cell according to TS25.304 on that frequency.

   1> if the IE "Frequency info" is not included in the received reconfiguration message:

      2> select a suitable UTRA cell according to TS25.304.

   1> if the received reconfiguration message included the IE "Primary CPICH info" (, and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info":

      2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Cell reselection";

      2> when the cell update procedure completed successfully:

         3> if the UE is in CELL_PCH or URA_PCH state:

            4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

            4> proceed as below.

   1> select PRACH according to TS25.331 subclause 8.5.17;

   1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

   1> use the transport format set given in system information;

   1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

      2> ignore that IE and stop using DRX.

   1> if the contents of the variable C_RNTI is empty:

      2> perform a cell update procedure according to TS 25.331 subclause 8.3.1 using the cause "Cell reselection";

      2> when the cell update procedure completed successfully:

         3> if the UE is in CELL_PCH or URA_PCH state:

            4> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "Uplink data transmission";

            4> proceed as below.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

> 1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC, using the new configuration after the state transition.

> 1> the procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.6.25.3   Test purpose

1. To confirm that the UE transits from CELL_DCH to CELL_FACH according to the PHYSICAL CHANNEL RECONFIGURATION message.
2. To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC on a common physical channel in a different frequency..

8.2.6.25.4   Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive.
UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

Table 8.2.6.25

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.6.25 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.25. The SS switches its downlink transmission power settings to columns "T1" and transmits MEASUREMENT CONTROL message in order for the UE to know information of cell 6. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message including new physical channel information. The UE shall then reconfigure the specified common physical channel according to this message and the system information in cell 6. Following this, it shall transmit CELL UPDATE message with IE "Cell update cause" set to "cell reselection". Upon completion of the cell update procedure, UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC on the DCCH in cell 6. The 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 initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.25.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.6.25.
3	←		MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4	←		PHYSICAL CHANNEL RECONFIGURATION	Including new frequency information
5	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
6	←		CELL UPDATE CONFIRM	Including the IE" New C-RNTI"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	
8	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	The UE selects PRACH and S-CCPCH indicated in SIB5 or SIB6 after entering CELL FACH state.
9	←→		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

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present
- Hysteresis	1.0 dB
- Time to trigger	10 s
- Reporting cell status	

- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [9] TS 34.108 clause 9, with the following exception:

Information Element	Value/remark
Frequency info	
- UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 6

CELL UPDATE (Step 5)

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

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

CELL UPDATE CONFIRM (Step 6)

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

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

UTRAN MOBILITY UPDATE CONFIRM (Step 7)

The contents of UTRAN MOBILITY UPDATE CONFIRM message is identical as "UTRAN MOBILITY UPDATE CONFIRM message" as found in [9] TS 34.108 clause 9.

8.2.6.25.5 Test requirement

After step 4 the UE shall transmit a CELL UPDATE message on the CCCH in cell 6.
After step 6 the UE shall transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the DCCH using AM RLC in cell 6.
After step 7 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 6.
After step 8 the UE shall be in CELL_FACH state of cell 6.

>>> Next change <<<

8.2.6.26 Physical Channel Reconfiguration from CELL_DCH to CELL_PCH (Frequency band modification): Success

8.2.6.26.1 Definition

8.2.6.26.2 Conformance requirement

If the UE receives:

-a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> perform the physical layer synchronisation procedure as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:
1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters CELL_PCH state, the UE shall, after the state transition and transmission of the response message:
1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS5.304.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS25.331 subclause 8.6.3.2.

1> if the UE enters CELL_PCH state from CELL_DCH state, and the received reconfiguration message included the IE "Primary CPICH info", and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info":

2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure completed successfully:

3> the procedure ends.

3GPP TS 25.331 clause 8.2.2, 8.5 and 8.6.

8.2.6.26.3 Test purpose

1. To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

2. To confirm that the UE transits from CELL_DCH to CELL_PCH according to the PHYSICAL CHANNEL RECONFIGURATION message.

3. To confirm that the UE releases a dedicated physical channel and selects a common physical channel in a different frequency.

8.2.6.26.4 Method of test

Initial Condition

System Simulator: 2 cells–Cell 1 is active and cell 6 is inactive
UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

Table 8.2.6.26

Parameter	Unit	Cell 1		Cell 6	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 2	
CPICH Ec	dBm/ 3.84 MHz	-55	-72	Off	-55

Table 8.2.6.26 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. SS switches the power settings from columns "T0" to "T1", whenever the description in multi-cell condition specifies the transmission power settings for cell 1 and cell 6.

The UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.26. The SS switches its downlink transmission power settings to columns "T1" and transmits MEASUREMENT CONTROL message in order for the UE to know information of cell 6. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message, which invokes the UE to transit from CELL_DCH to CELL_PCH and includes new frequency information. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters CELL_PCH state of cell 6. Then, UE shall transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". Upon completion of the procedure, the SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of UE is in CELL_DCH state of cell 1 and the SS has configured its downlink transmission power setting according to columns "T0" in table 8.2.6.26.
2				The SS switches its downlink transmission power settings to columns "T1" in table 8.2.6.26.
3	←		MEASUREMENT CONTROL	The SS specifies inter-frequency measurement for cell 6.
4	←		PHYSICAL CHANNELRECONFIGURATION	Including new frequency information.
5	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE transmit this message in cell 1.
6	→		CELL UPDATE	The IE "Cell update cause" is set to "cell reselection".
7	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_PCH".
8				The SS waits for 5 s.

9	←→	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

MEASUREMENT CONTROL (Step 3)

Use the same message sub-type found in [9] TS 34.108 clause 9, with the following exceptions in the IE(s) concerned:

Information Element	Value/remark
Measurement Identity	15
Measurement Command	Setup
Measurement Reporting Mode	
- Measurement Reporting Transfer Mode	Acknowledged Mode RLC
- Periodic Reporting / Event Trigger Reporting Mode	Event Trigger
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency measurement object list	
- Inter-frequency cell info list	
- CHOICE inter-frequency cell removal	No inter-frequency cells removed
- New inter-frequency cells	
- Inter-frequency cell id	6
- Frequency info	
- UARFCN uplink (Nu)	UARFCN of the uplink frequency for cell 6
- UARFCN downlink (Nd)	UARFCN of the downlink frequency for cell 6
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Read SFN Indicator	
- CHOICE Mode	FDD
- Primary CPICH Info	
- Primary Scrambling Code	350
- Primary CPICH TX power	Not Present
- Primary CPICH TX power	
- TX Diversity Indicator	Not Present
- Cell for measurement	Not Present
- Inter-frequency measurement quantity	
- CHOICE reporting criteria	Inter-frequency reporting criteria
- Filter Coefficient	0
- CHOICE Mode	FDD
- Measurement quantity for frequency quality estimate	CPICH RSCP
- Inter-frequency reporting quantity	
- UTRA Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related cell reporting quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell Identity reporting indicator	TRUE
- COICE Mode	FDD
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting cell status	Not present
- CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Measurement validity	
- UE state	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not present
- W used frequency	Not present

- Hysteresis	1.0 dB
- Time to trigger	10 s
- Reporting cell status	
- CHOICH reported cell	Report cells within active and/or monitored set on used frequency or within active and/or monitored set on non-used frequency
- Maximum number of reported cells	2
- Parameters required for each non-used frequency	
- Threshold non used frequency	-85dbm
- W non-used frequency	0.0

PHYSICAL CHANNEL RECONFIGURATION (Step 4)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in [9] TS 34.108 clause 9 with following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL_PCH
UTRAN DRX cycle length coefficient	3
Frequency info	
- UARFCN uplink (Nu)	Same uplink UARFCN as used for cell 6
- UARFCN downlink (Nd)	Same downlink UARFCN as used for cell 6

CELL UPDATE (Step 6)

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

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

CELL UPDATE CONFIRM (Step 7)

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

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

8.2.6.26.5 Test requirement

After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC in cell 1.
After step 5 the UE shall transmit a CELL UPDATE message on the CCCH with IE "Cell update cause" set to "cell reselection" in cell 6.
After step 8 the UE shall be in CELL_PCH state in cell 6.

>>> Next change <<<

8.2.6.27 Physical channel reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.6.27.1 Definition

8.2.6.27.2 Conformance requirement

If the UE receives:

-a PHYSICAL CHANNEL RECONFIGURATION message;

it shall:

1> perform the physical layer synchronisation procedure as specified in TS25.214;

1> act upon all received information elements as specified in TS25.331 subclause 8.6, unless specified in the following and perform the actions below.

The UE shall then:
1> enter a state according to TS25.331 subclause 8.6.3.3.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:
1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH using AM RLC, using the old configuration before the state transition.

If after state transition the UE enters CELL_PCH state, the UE shall, after the state transition and transmission of the response message:
1> if the IE "Frequency info" is included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304 on that frequency.

1> if the IE "Frequency info" is not included in the received reconfiguration message:

2> select a suitable UTRA cell according to TS25.304.

1> prohibit periodical status transmission in RLC;

1> remove any C-RNTI from MAC;

1> clear the variable C_RNTI;

1> select Secondary CCPCH according to TS25.331 subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in TS5.331 subclause 8.6.3.2.

1> if the UE enters CELL_PCH state from CELL_FACH state, and the received reconfiguration message included the IE "Primary CPICH info", and the UE selected another cell than indicated by this IE:

2> initiate a cell update procedure according to TS25.331 subclause 8.3.1 using the cause "cell reselection";

2> when the cell update procedure is successfully completed:

3> the procedure ends.

3GPP TS 25.331 clause 8.2.2,8.3, 8.5 and 8.6.

8.2.6.27.3 Test purpose

1. To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.
2. To confirm that the UE transits from CELL_FACH to CELL_PCH according to the PHYSICAL CHANNEL

RECONFIGURATION message.

3. To confirm that the UE replies with CELL UPDATE message in cell 6 when the SS transmits PAGING TYPE 1 message to the UE.

8.2.6.27.4　　　　Method of test

Initial Condition

System Simulator: 1 cell– **Cell 1 is active.**
UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in CELL_FACH state of cell 1. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message. The UE transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using AM RLC and enters CELL_PCH state. The SS calls for generic procedure C.4 to check that UE is in CELL_PCH state.

Expected sequence

Step	Direction UE	Direction SS	Message	Comment
1				The UE is in CELL_FACH state of cell 1.
2	←		PHYSICAL CHANNEL RECONFIGURATION	
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4				The SS waits for 5 s.
5	←→		CALL C.4	If the test result of C.4 indicates that UE is in CELL_PCH state, the test passes, otherwise it fails.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type titled "Packet to CELL_FACH from CELL_FACH in PS" in [9] TS 34.108 clause 9 with following exceptions:

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

8.2.6.27.5　　　　Test requirement

After step 2 the UE shall transmit a **PHYSICAL CHANNEL RECONFIGURATION** COMPLETE message on uplink DCCH using AM RLC.
After step 4 the UE shall be in CELL_PCH state in cell 6.

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

T1-020336

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020270r2

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1** | **CR** | **211** | ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Incompatible simultaneous security reconfiguration test case	
Source: ⌘	MCI	
Work item code: ⌘	TEI	***Date:*** ⌘ 10/5/2002
Category: ⌘ **F**		***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	To test the behaviour of the UE when it receives simultaneously two security configuration
Summary of change: ⌘	A new test case is added to check that after UE receives two security configuration from two different messages, will ignores the second security configuration and transmit a failure message in response to the second message. Revision 2 corrections: References to the core spec are added in the conformance requirement section.
Consequences if not approved: ⌘	The test prose cannot test UE correctly.

Clauses affected: ⌘	
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Affects R'99 and R'4 UE test cases.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

8.2.2.26 Radio Bearer Reconfiguration from CELL_DCH to CELL_DCH: Success (Incompatible Simultaneous Reconfiguration)

8.2.2.26.1 Definition

8.2.2.26.2 Conformance requirement

If the UE receives:

- a RADIO BEARER RECONFIGURATION message; or

…

The UE shall transmit a response message as specified in TS 25.331 subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

…

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE, the UE shall:

1> ignore this second attempt to change the ciphering configuration; and

1> set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to TRUE.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to FALSE, the UE shall:

1> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to TRUE;

…

If the variable INCOMPATIBLE_SECURITY_RECONFIGURATION is set to TRUE due to the received reconfiguration message, the UE shall:

1> transmit a failure response message as specified in TS 25.331 subclause 8.2.2.9, setting the information elements as specified below:

2> include the IE "RRC transaction identifier"; and

2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and

2> clear that entry;

2> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration".

1> set the variable INCOMPATIBLE_SECURITY_RECONFIGURATION to FALSE;

1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

Reference

3GPP TS 25.331 clause 8.2.2.12a, clause 8.6.3.4.

8.2.2.26.3 Test purpose

1. To confirm that the UE ignores the subsequent security reconfiguration information which is contained in the RADIO BEARER RECONFIGURATION message.

2. To confirm that the UE reconfigures according to the SECURITY MODE COMMAND message.

3. To confirm that the UE transmits RADIO BEARER RECONFIGURATION FAILURE message on the uplink DCCH using AM RLC.

4. To confirm that the UE transmits SECURITY MODE COMPLETE message on the uplink DCCH using AM RLC.

8.2.2.26.4 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 SECURITY MODE COMMAND message. SS then transmits a RADIO BEARER RECONFIGURATION message. The UE ignores the RADIO BEARER RECONFIGURATION message and transmits a RADIO BEARER RECONFIGURATION FAILURE message and configures the radio bearers according to the SECURITY MODE COMMAND message. On completion of ciphering reconfiguration, the UE shall transmit a SECURITY MODE COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SECURITY MODE COMMAND	This message includes IE "Ciphering mode info".
2	←		RADIO BEARER RECONFIGURATION	SS send this message before the activation time in step 1 expires. This message includes IE "Ciphering mode info".
3	→		RADIO BEARER RECONFIGURATION FAILURE	The UE ignores the ciphering mode information in step 2.
4	→		SECURITY MODE COMPLETE	

Specific Message Contents

SECURITY MODE COMMAND (Step 1)

If the initial state of the UE is state 6-9, use the message sub-type in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	2
- RLC sequence number	Current RLC SN+4
- RB identity	3
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	4
- RLC sequence number	Current RLC SN+X (Note 1)

If the initial state of the UE is state 6-10, use the message sub-type in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	2
- RLC sequence number	Current RLC SN+4
- RB identity	3
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	4
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	20
- RLC sequence number	Current RLC SN+X (Note 1)

RADIO BEARER RECONFIGURATION (for Step 2)

If the initial state of the UE is state 6-9, use the message sub-type entitled "Speech in CS" or "Non-speech in CS" in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	2
- RLC sequence number	Current RLC SN+4
- RB identity	3
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	4
- RLC sequence number	Current RLC SN+X (Note 1)

If the initial state of the UE is state 6-10, use the message sub-type entitled "Packet to CELL_DCH from CELL_DCH in PS" in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
RRC transaction identifier	0
Ciphering mode info	
- Ciphering mode command	Start/restart
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Ciphering activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer activation time	
- RB identity	1
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	2
- RLC sequence number	Current RLC SN+4
- RB identity	3
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	4
- RLC sequence number	Current RLC SN+X (Note 1)
- RB identity	20
- RLC sequence number	Current RLC SN+X (Note 1)

Note 1: X is set to 1.

RADIO BEARER RECONFIGURATION FAILURE (for Step 3) (FDD)

Check that the message received is the same as the message sub-type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/remark
Failure cause	incompatible simultaneous reconfiguration

8.2.2.26.5 Test requirement

After step 2 the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC and set the failure cause to "incompatible simultaneous reconfiguration".

After step 3 the UE shall transmit a SECURITY MODE COMPLETE message on the DCCH using AM RLC specified in step 1.

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

T1-020337

3GPP TSG- T1 SIG Meeting #23
Lund, Sweden, 21st – 23rd May 2002

T1S-020271

CR-Form-v6.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1 CR 212** | ⌘ **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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Signalling Connection Release test case	
Source: ⌘	MCI	
Work item code: ⌘	TEI	***Date:*** ⌘ 10/5/2002
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: ⌘	To test the behaviour of the UE when it receives SIGNALLING CONNECTION RELEASE message which gives an invalid configuration.
Summary of change: ⌘	A new test case is added. The UE is requested to establish RAB in the domain that is supported by the UE. Then the UE is requested to perform measurement reporting periodically. SS shall send a SIGNALLING CONNECTION RELEASE to request the UE to release the connection of the domain in which the RAB were set up. The test requires the UE to ignore this message, send a RRC STATUS message and then continue its measurement reporting procedure.
Consequences if not approved: ⌘	Insufficient test coverage.

Clauses affected: ⌘	
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Affects R'99 and R'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.

8.1.11 Signalling Connection Release (Invalid configuration)

8.1.11.1 Definition

8.1.11.2 Conformance requirement

Upon reception of a SIGNALLING CONNECTION RELEASE message, the UE shall:

> 1> indicate the release of the signalling connection and pass the value of the IE "CN domain identity" to upper layers;

> 1> remove the signalling connection with the identity indicated by the IE "CN domain identity" from the variable ESTABLISHED_SIGNALLING_CONNECTIONS;

> 1> clear the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;

> 1> the procedure ends.

If radio access bearers for the CN domain indicated by the IE "CN domain identity" exist in the variable ESTABLISHED_RABS, the UE shall:

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

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

> 1> set the IE "Received message type" to SIGNALLING CONNECTION RELEASE; and

> 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS and clear that entry;

> 1> include the IE "Protocol error information" with contents set to the value "Message not compatible with receiver state";

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

>> 2> continue with any ongoing processes and procedures as if the invalid SIGNALLING CONNECTION RELEASE message has not been received.

Reference

3GPP TS 25.331 clause 8.1.13.3 and 8.1.13.5.

8.1.11.3 Test purpose

To confirm that the UE ignores the SIGNALLING CONNECTION RELEASE REQUEST message which request the UE to release signalling connection of domain that contains established radio access bearers.

To confirm that the UE transmit a RRC STATUS message to SS after detecting an invalid configuration in the received message.

8.1.11.4 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

SS transmit MEASUREMENT CONTROL message to UE. In this message, SS requests UE to perform traffic volume measurement. Key measurement parameters are as follows: measurement quantity = "RLC Buffer Payload", report criteria = "periodic reporting criteria", reporting interval = "6 seconds", reporting amount = 'infinity'. UE shall begin traffic volume measurements, and shall send MEASUREMENT REPORT message after completing first measurement. UE shall send second MEASUREMENT REPORT message 6 seconds after first MEASUREMENT REPORT message. Then SS transmit SIGNALLING CONNECTION RELEASE message to UE. UE shall ignore the message and send a RRC STATUS message to SS. Then the UE shall send MEASUREMENT REPORT message to SS within the next 6 seconds.

Expected sequence

Step	Direction		Message	Comment
	UE	**SS**		
1	←		MEASUREMENT CONTROL	Periodical traffic volume measurement reporting is requested.
2	→		MEASUREMENT REPORT	
3	→		MEASUREMENT REPORT	Time difference between earlier and this MEASUREMENT REPORT message should be 6 seconds.
4	←		SIGNALLING CONNECTION RELEASE	If the initial condition of the UE is state 6-9, set the IE "CN domain identity" to "CS domain". If the initial condition of the UE is state 6-10, set the IE "CN domain identity" to "PS domain".
5	→		RRC STATUS	
6	→		MEASUREMENT REPORT	This message should be sent within 6 seconds after the previous message.

Specific Message Content

MEASUREMENT CONTROL (Step 1)

For MEASUREMENT CONTROL message in step 1, use the message sub-type as found in clause 9 of TS 34.108, with the exception of the following Information Elements:

Information Element	Value/Remark
Measurement Identity	1
Measurement Command	Modify
Measurement reporting mode	
- Transfer Mode	Acknowledged mode
- Periodical or event trigger	Periodic
Additional measurement list	Not Present
CHOICE measurement type	Traffic Volume Measurement
- Traffic volume measurement object list	
- Uplink transport channel type	DCH
- UL Target Transport Channel ID	5
- Traffic volume measurement quantity	
- Measurement quantity	RLC Buffer Payload
- Time Interval to take an average or a variance	Not Present
- Traffic volume reporting quantity	
- RLC Buffer Payload for each RB	True
- Average of RLC Buffer Payload for each RB	False
- Variance of RLC Buffer Payload for each RB	False
- Measurement validity	Not Present
- CHOICE Reporting criteria	Periodical Reporting Criteria
- Amount of reporting	Infinity
- Reporting interval	6 Sec
DPCH compressed mode status	Not Present

MEASUREMENT REPORT (Step 2, 3 and 6)

Check that the message received is the same as the message sub-type found in clause 9 of TS 34.108, with the following exceptions:

Information Element	Value/Remarks
Measurement identity	1
Measured Results	
- CHOICE measurement	Traffic volume measured results list
- Traffic volume measurement results	
- RB identity	1
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	2
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	3
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
- RB identity	4
- RLC buffer payload	Check to see if this IE is present
- RLC buffer payload average	Check to see if this IE is absent
- RLC buffer payload variance	Check to see if this IE is absent
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

SIGNALLING CONNECTION RELEASE (Step 4)

Information Element	Value/Remarks
Message Type	
RRC transaction identifier	0
Integrity check info	The presence of this IE depends on the 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.

CN domain identity	If the initial condition of the UE is state 6-9, set to "CS domain". If the initial condition of the UE is state 6-10, set to "PS domain".

RRC STATUS (Step 5)

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.
Identification of received message	Not Checked
- Received message type	SIGNALLING CONNECTION RELEASE
- RRC transaction identifier	0
Protocol error information	
- Protocol error cause	Message not compatible with receiver state

8.1.11.5 Test requirement

After step 1 the UE shall transmit MEASUREMENT REPORT message twice at an interval of 6 seconds.

After step 4 the UE shall transmit a RRC STATUS message with protocol error cause set to "Message not compatible with receiver state".

After step 5 the UE shall transmit a MEASUREMENT REPORT within 6 seconds.

3GPP TSG T WG1 #15
Lund, Sweden, 21st & 24th May 2002

T1S-020338

3GPP TSG-T1 SIG Meeting #23
Lund, Sweden, 20th – 22nd May 2002

T1S-020280

CR-Form-v5.1

CHANGE REQUEST

⌘ **TS 34.123-1 CR 213** ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Interfrequency Measurement for Events 2B and 2E	
Source: ⌘	Motorola	
Work item code: ⌘	TEI	***Date:*** ⌘ 13/5/02
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: ⌘	Absolute measurement accuracy for inter-frequency measurements of RSCP is not defined in 25.133. Hence, CPICH RSCP cannot be specified as the measurement quantity for events 2B and 2E
Summary of change: ⌘	In Measurement Control message Frequency quality estimate quantity set to CPICH Ec/No instead of CPICH RSCP In Measurement Report contents 'CPICH RSCP reporting indicator' set to False and 'CPICH Ec/No reporting indicator set to true Frequency threshold updated
Consequences if not approved: ⌘	Incorrect measurement accuracy being tested

Clauses affected: ⌘	8.4.1.25
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Applicable to R99 and later releases

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

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

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

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

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

8.4.1.25 Measurement Control and Report: Inter-frequency measurement for events 2B and 2E

8.4.1.25.1 Definition

8.4.1.25.2 Conformance requirement

1. When event 2E is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency.

2. When event 2B is ordered by UTRAN in a MEASUREMENT CONTROL message the UE shall send a report when the estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency" and the hysteresis and time to trigger conditions are fulfilled. The corresponding report contains at least the best primary CPICH on the non-used frequency that triggered the event.

Reference

3GPP TS 25.331 clause 14.2.1.2, 14.2.1.5.

8.4.1.25.3 Test Purpose

1. To confirm that the UE sends MEASUREMENT REPORT message when event 2E is configured and the estimated quality of a non-used frequency is below the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the non-used frequency that triggered the event.

2. To confirm that the UE sends MEASUREMENT REPORT message when event 2B is configured and estimated quality of the currently used frequency is below the value of the IE "Threshold used frequency" and the estimated quality of a non-used frequency is above the value of the IE "Threshold non-used frequency". This MEASUREMENT REPORT message shall contain at least the best primary CPICH on the non-used frequency that triggered the event.

8.4.1.25.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS shall follow the values indicated in the column marked "T0" in table 8.4.1.24-1. The table is found in "Test Procedure" clause.

UE: CS-DCCH_DCH_Initial (State 6-1) or PS-DCCH_DCH_ Initial (State 6-3) 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 8.4.1.25-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this clause.

Table 8.4.1.25-1

Parameter	Unit	Cell 1			Cell 4		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 2		
CPICH Ec	dBm	-60	-63	-74	-74	-60	-60

The UE is initially in CELL_DCH state of cell 1. SS commands the UE to perform Inter-frequency measurements and report event 2B and event 2E by sending MEASUREMENT CONTROL message. SS then performs PHYSICAL CHANNEL RECONFIGURATION procedure to activate compressed mode. Since quality estimate of non-used frequency is below threshold, the UE sends MEASUREMENT REPORT message indicating event 2E. SS then configures itself according to the values in columns "T1" shown above. Now quality estimate of used and non-used frequency is above threshold and hence neither event 2B nor event 2E will be triggered. SS then configures itself according to the values in columns "T2" shown above. Quality estimate for used frequency is now below threshold, while that of non-used frequency is above threshold, the UE sends MEASUREMENT REPORT message to report event 2B.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		MEASUREMENT CONTROL	SS commands the UE to perform Inter-frequency measurements and to report event 2B and 2E.
2	←		PHYSICAL CHANNEL RECONFIGURATION	SS instructs UE to begin compressed mode operation.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
4	→		MEASUREMENT REPORT	The UE shall report event 2E. Time duration between activation of compressed mode and reception of this message should be at least 5 seconds.
5				SS re-adjusts the downlink transmission power settings according to columns "T1" in table 8.4.1.25-1.
6				Check for 10 seconds the UE shall not send measurement report message.
7				SS re-adjusts the downlink transmission power settings according to columns "T2" in table 8.4.1.25-1.
8	→		MEASUREMENT REPORT	The UE shall report event 2B. Time duration between changing power levels according to columns "T2" and reception of this message should be at least 5 seconds.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

MEASUREMENT CONTROL (Step 1)

Information Element	Value/Remark
Measurement identity	4
Measurement command	Setup
- CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- Inter-frequency cell removal	Not present
- New inter-frequency info list	
- Inter-frequency cell id	Id of Cell 4
- Frequency Information	Frequency of Cell 4
- Cell info	
- Cell individual offset	Not present
- Reference time difference to cell	Not present
- CHOICE mode	FDD
- Read SFN Indicator	FALSE
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code of Cell 4
- Primary CPICH TX power	Not present
- TX Diversity Indicator	FALSE
- Cell for measurement	Not present
- Inter-frequency measurement quantity	
- Filter Coefficient	4
- Frequency quality estimate quantity	CPICH Ec/No~~RSCP~~
- Inter-frequency reporting quantity	
- UTRAN Carrier RSSI	FALSE
- Frequency quality estimate	FALSE
- Non frequency related quantities	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Measurement validity	Not present
- UE autonomous update mode	Not present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each events	
- Inter-frequency event identity	2E
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Not present
- Non used frequency parameter list	
- Non used frequency threshold	~~-66 dBm~~ –15dB
- Non used frequency W	0
- Inter-frequency event identity	2B
- Used frequency threshold	~~-68 dBm~~ –16dB
- Used frequency W	4
- Hysteresis Inter Frequency	1 dB
- Time to trigger	5000 mSec
- Reporting cell status	Within monitored set non used frequency
- Maximum number of reporting cells	1
- Non used frequency parameter list	
- Non used frequency threshold	~~-66 dBm~~ –15dB
- Non used frequency W	0
Measurement reporting mode	
- Measurement reporting transfer mode	Unacknowledged Mode RLC
- Periodic reporting / Event trigger reporting mode	Event trigger
Additional measurement list	Not present
DPCH compressed mode status info	Not present

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_DCH in PS)", with the following exceptions in the IE(s) concerned:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indication	Maintain
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- CHOICE Mode	FDD
- Power offset PPilot-DPDCH	TBD
- DL rate matching restriction information	Not present
- Spreading factor	Refer to the parameter set in TS 34.108
- Fixed or flexible position	Flexible
- TFCI existence	FALSE
- Number of bits for Pilot bits (SF=128, 256)	Not present
- DPCH compressed mode info	
- TGPSI	1
- TGPS status flag	Active
- TGCFN	(Current CFN+(256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- CHOICE UL/DL mode	DL
- Downlink compressed mode method	SF/2
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not present
- DeltaSIRAfter2	Not present
- N identify abort	Not present
- T Reconfirm abort	Not present
- TX diversity mode	None
- SSDT information	Not present
- Default DPCH offset value	0

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity	Check to see if set to 4
Measured results	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2E
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

MEASUREMENT REPORT (Step 8)

Information Element	Value/Remarks
Measurement identity	4
Measured results	Inter-frequency measured results
- Frequency information	Frequency of Cell 4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measured results	
- Cell Identity	Check to see if it is absent
- SFN-SFN Observed Time Difference	Check to see if this IE is absent
- Cell synchronisation information	Check to see if this IE is absent
- Mode Specific Info	FDD
- Primary CPICH Info	
- Primary scrambling code	Primary scrambling code for cell 4
- CPICH Ec/No	Check to see if it is present~~absent~~
- CPICH RSCP	Check to see if it is absent~~present~~
- Pathloss	Check to see if it is absent
Measured results on RACH	Check to see if it is absent
Additional measured results	Check to see if it is absent
Event results	Inter frequency event results,
- Event ID	2B
- Cell measurement event results	
- Frequency info	Frequency of Cell 4
- Primary CPICH info	
- Primary scrambling code	Primary scrambling code of Cell 4

8.4.1.25.5 Test Requirement

1. In step 4 the UE shall send MEASUREMENT REPORT message indicating event 2E. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code of Cell 4.

2. In step 8 the UE shall send MEASUREMENT REPORT message indicating event 2B. IE "Cell measurement event results" in this message shall contain frequency information and primary scrambling code of Cell 4.

3GPP TSG-T1 SIG Meeting #23
Lund, Sweden, 20ᵗʰ – 22ⁿᵈ May 2002

T1S-020281r1

CR-Form-v5.1

CHANGE REQUEST

⌘	**TS 34.123-1**	**CR**	**214**	⌘	**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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to HCS Cell Reselection tests	

Source: ⌘	Motorola

Work item code: ⌘	TEI	**Date:** ⌘	13/5/02

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 Cell Selction reselection parameters with HCS, were not in accordance with the expected test flow.

Summary of change: ⌘	1. R (Cell Reselection criteria, when HCS is not used) calculation is removed as its presence is not required with HCS being used

2. Parameter SinterSearch value changed from 16 to 0, else condition $Sx \leq SinterSearch$ will be satisfied and hence triggering to Cell-Reselection on all inter and intra frequencies irrespective of HCS priority shall take place.

3. Parameter SsearchHCS value changed from 53 to 35, else condition ($Srxlev_s \leq Ssearch_{HCS}$) will be satisfied and hence triggering to Cell-Reselection on all inter and intra frequencies irrespective of HCS priority shall take place.

4. Power level of Cell3 at 'T1' has ben changed from –73 to –70 dBm so as to assign a safe power difference of –6db between cell 3 CPICH RSCP and Qhcs, while reselecting Cell-3 from Cell-1.

5. In Tables 8.3.1.23-1, 8.3.1.24-1 & 8.3.2.13-1 a new row to give HCS priority of the cell has been added, and CPICH power levels changed from RSCP to Ec.

6. Power Level of CELL 1 at time T1 has been changed from –61 to -76 |

Consequences if not approved: ⌘	The UE may not select the desired Cell, as given in the expected sequence

Clauses affected:	⌘	8.3.1.23, 8.3.1.24 & 8.3.2.13		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘	Applicable to R99 and later releases		

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.

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 inTable 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_-measure	CPICH RSCP
- CHOICE mode	FDD
- Sintrasearch	16 dB
- Sintersearch	~~16~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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	
- $Qoffset1_{s,n}$	-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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.1.~~21~~23-1

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		
HCS Priority		6			7			7		
CPICH ~~RSCP~~Ec	dBm	-61	-~~61~~76	-61	-80	-80	-67	-80	-~~73~~70	-73
H* (After PenaltyTime)		15	~~15~~0	15	-~~5~~4	-~~5~~4	9	-~~5~~4	~~3~~6	3
~~R* (After PenaltyTime)~~		~~-41~~	~~-41~~	~~-41~~	~~-60~~	~~-60~~	~~-47~~	~~-60~~	~~-53~~	~~-53~~

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

The UE is in the CELL_FACH 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 8.3.1.21-1. 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~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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	
- $Qoffset1_{s,n}$	-20dB
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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 (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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

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~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.1.~~21~~24-1

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		
HCS Priority		6			7			7		
CPICH ~~RSCP~~Ec	dBm	-61	-~~61~~7 6	-61	-80	-80	-67	-80	-~~73~~70	-73
H* (After Penalty Time)		15	~~15~~0	15	-~~5~~4	-~~5~~4	9	-~~5~~4	~~3~~6	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~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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	
- $Qoffset1_{s,n}$	-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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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 (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
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

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".

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

8.3.2.13.1   Definition

8.3.2.13.2   Conformance requirement

This procedure is to update UTRAN with the current URA of the UE after a change of URA has occurred in URA_PCH state with HCS parameter applied. It may also be used for supervision of the RRC connection, even if no change of URA takes place.

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.

8.3.2.13.3   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 an URA update procedure after the successful change of URA due to HCS Cell Reselection. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

8.3.2.13.4   Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.11-1. Cell2 with URA-ID 1 andCell 3 with URA-ID 2 are switched off
UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, with URA-ID 1 from the list of URA-ID in cell 1

Specific Message Content

For system information blocks 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~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1			Ch. 1		
HCS Priority		6			7			7		
CPICH ~~RSCP~~Ec	dBm	-61	-~~61~~76	-61	-80	-80	-67	-80	-~~73~~70	-73
H* (After PenaltyTime)		15	1~~5~~0	15	-~~5~~4	-~~5~~4	9	-~~5~~4	3~~6~~	3
~~R* (After PenaltyTime)~~		~~-41~~	~~-41~~	~~-41~~	~~-60~~	~~-60~~	~~-47~~	~~-60~~	~~-53~~	~~-53~~

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

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

Expected sequence

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

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~~ 0 dB
- SsearchHCS	~~53~~ 35 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 (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~~ 0 dB
- SsearchHCS	~~53~~ 35 dB
- RAT List	This parameter is configurable
- RAT identifier	GSM
- Ssearch,RAT	-32 dB
- SHCS,RAT	Not Present
- $S_{limit,SearchRAT}$	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 11 (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$_{s,n}$	-20dB
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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 (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
- Qoffset2s,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
- Qoffset2s,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

Information Element	Value/remark
- Qrxlevmin	-115 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
- Qoffset2s,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
- Qoffset2s,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

URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark

U-RNTI
  - SRNC Identity
  - S-RNTI
URA 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 'change of URA'

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 2

URA UPDATE CONFIRM (Step 11)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.13.5   Test requirement

After step 4 the UE shall find that URA-ID 2 is not in its maintained list of URA-IDs. After cell reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message setting value "change of URA" into IE "URA update cause".
After step 7 the UE shall find that URA-ID 1 is not in its maintained list of URA-IDs. After cell

reselection, the UE shall move to CELL_FACH state and transmit URA UPDATE message

setting value "change of URA" into IE "URA update cause".

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

Tdoc T1-020340

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

Tdoc T1S-020203r1

CR-Form-v5

CHANGE REQUEST

| ⌘ | **34.123-1** CR **215** | ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Changes to radio bearer tests in clause "14.4 Combinations on SCCPCH"	
Source: ⌘	Nokia	
Work item code: ⌘	TEI	***Date:*** ⌘ 2002-04-04

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: ⌘	Test cases in clause 14.4 are incomplete

Summary of change: ⌘	1. 14.4.2: Radio bearer is tested with three different SYSTEM INFORMATION configurations, test case detailed. 2. 14.4.3: Added details about SYSTEM INFORMATION configuration to be used in the test. 3. 14.4.4: Added details about SYSTEM INFORMATION configuration to be used in the test.

Consequences if not approved: ⌘	Incomplete test cases in the specification.

Clauses affected: ⌘	14.4.2, 14.4.3 and 14.4.4

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/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.

14.3.6 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.3.6.1 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 10 ms TTI

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.6 for the downlink 10 ms TTI case.

14.3.6.2 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH / 10 ms TTI

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.6 for the downlink 20 ms TTI case.

<Start of modified section>

14.4 Combinations on SCCPCH

14.4.1 Stand-alone signalling RB for PCCH

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.

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

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.2.

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

1. The contents of System Information Block type 5 and 6 as specified in TS 34.108, clause 6.1.1.

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

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

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

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

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

14.4.3 Interactive/Background 32 kbps RAB + SRBs for PCCH + SRB for CCCH + SRB for DCCH + SRB for BCCH

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.3.

The contents of System Information Block type 5 and 6 as specified in TS 34.108, clause 6.1 are used in this test. One SCCPCH is used in this SYSTEM INFORMATION (BCCH) configuration. The SCCPCH carries the PCH, the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH.

14.4.4 RB for CTCH + SRB for CCCH +SRB for BCCH.

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.3.4.

The contents of System Information Block type 5 and 6 as specified in TS 34.108, clause 6.1.2. are used in this test. Three SCCPCHs are used in this SYSTEM INFORMATION configuration. The first SCCPCH carries the PCH. The second SCCPCH carries the FACH for CTCH (Cell Broadcast Service) and the FACH for SRBs on CCCH/ BCCH for idle mode UEs. The third SCCPCH carries the FACH for Interactive/Background 32 kbps PS RAB and the FACH for SRBs on CCCH/ DCCH/ BCCH for connected mode UEs.

CR-Form-v5

CHANGE REQUEST

| ⌘ | **34.123-1** CR **217** | ⌘**rev** | **-** | ⌘ | Current version: | **4.2.0** | ⌘ |

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

Title: ⌘	Test case for approved new bearers	
Source: ⌘	Nortel Networks	
Work item code: ⌘	TEI	***Date:*** ⌘ 29/03/2002
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 <u>TR 21.900</u>.

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: ⌘	Many new RAB combinations were approved in 34.108 clause 6.10 during T1/SIG #21. This CR introduces test cases in clause 14 of 34.123-1 for 2 of these new RABs:
	14.2.5a Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.
	14.2.7a Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.
Summary of change: ⌘	2 new test cases introduced in clause 14.
Consequences if not approved: ⌘	No test case would exist for these 2 RAB combinations.

Clauses affected: ⌘	14.2.5a, 14.2.7a
Other specs affected: ⌘	☐ Other core specifications ⌘
	☐ Test specifications
	☐ O&M Specifications
Other comments: ⌘	Affects 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.

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

14 Interoperability Radio Bearer Tests

14.1 General information for interoperability radio bearer tests

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

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

14.1.1 Generic radio bearer test procedure

Initial conditions

UE in idle mode

Test procedure

  a) The SS 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 transperant mode in downlink and is not configured for segmented operation then the radio bearer test case shall use a DL RLC SDU size (defined by the "Test data size" parameter) equal to the DL RLC PDU size. See [7] TS 25.322 for details regarding UE operation in RLC transperent mode.

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	RRC Transport format combinations is limited to "Restricted UL TFCIs", as specified for the sub-test
12	<--		CLOSE UE TEST LOOP	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	TC
17	-->		OPEN UE TEST LOOP COMPLETE	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

14.2   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 6.10.2.4.3.1.

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 6.10.2.4.3.2.

14.2.3   Stand-alone UL:13.6 DL:13.6 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 6.10.2.4.1.3.

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 6.10.2.4.3.3.

14.2.4   Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.4.1   Conformance requirement

The UE shall be able to establish the UTRAN requested radio bearers within the UE's signaled radio access capabilities.

The UE shall correctly transfer user data from peer to peer RLC entitities according to the requested radio bearer configuration.

Reference(s)

3GPP TS 25.331, clause 8.2.1

3GPP TS 25.2xx series (Physical Layer)

3GPP TS 25.321 (MAC)

3GPP TS 25.322 (RLC)

14.2.4.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.4.

14.2.4.3   Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1, TF1)

Downlink TFS:

	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x148
	TF1, bits	1x39	1x103	1x60	1x148
	TF2, bits	1x81	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 103 bits RB7: 60 bits	RB5: 39 bits RB6: No data RB7: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 81 bits RB6: 103 bits RB7: 60 bits	RB5: 81 bits RB6: 103 bits RB7: 60 bits
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.

14.2.4.4   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).

3. At step 15 the UE shall return

   - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 or RB7.

   - for sub-test 2: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS

14.2.4a   Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.4a.

14.2.5   Conversational / speech / UL:10.2 DL:10.2 kbps / CS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.5.1   Conformance requirement

See clause 14.2.4.1.

14.2.5.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.5.

14.2.5.3   Method of test

Uplink TFS:

	TFI	**RB5 (RAB subflow #1)**	**RB6 (RAB subflow #2)**	**RB7 (RAB subflow #3)**	**DCCH**
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x99	1x40	1x148
	TF2, bits	1x65	N/A	N/A	N/A

Uplink TFCS:

TFCI	**(RB5, RB6, RB7,DCCH)**
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF1, TF0)
UL_TFC3	(TF0, TF0, TF0, TF1)
UL_TFC4	(TF1, TF0, TF0, TF1)
UL_TFC5	(TF2, TF1, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	**RB6 (RAB subflow #2)**	**RB7 (RAB subflow #3)**	**DCCH**
TFS	TF0, bits	1x0	0x99	0x40	0x148
	TF1, bits	1x39	1x99	1x40	1x148
	TF2, bits	1x65	N/A	N/A	N/A

Downlink TFCS:

TFCI	**(RB5, RB6, RB7, DCCH)**
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1)
DL_TFC4	(TF1, TF0, TF0, TF1)
DL_TFC5	(TF2, TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 99 bits RB7: 40 bits	RB5: 39 bits RB6: No data RB7: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5	RB5: 65 bits RB6: 99 bits RB7: 40 bits	RB5: 65 bits RB6: 99 bits RB7: 40 bits
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.

14.2.5.4   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 (1x65); RB6/TF1 (1x99); and RB7/TF1 (1x40).

3. At step 15 the UE shall return

    -   for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 or RB7.

    -   for sub-test 2: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS.

14.2.5a   Conversational / speech / UL:(10.2, 6.7, 5.9, 4.75) DL:(10.2, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.5a.

14.2.5a.1   Conformance requirement

See clause 14.2.4.1.

14.2.5a.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.5a.

14.2.5a.3   Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	0x65(alt. 1x0)	0x99	0x40	0x148
	TF1, bits	1x39	1x53	1x40	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x76		
	TF4, bits	1x58	1x99		
	TF5, bits	1x65	N/A		

Uplink TFCS:

TFCI	(RB5, RB6, RB7,DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1)
UL_TFC7	(TF1, TF0, TF0, TF1)
UL_TFC8	(TF2, TF1, TF0, TF1)
UL_TFC9	(TF3, TF2, TF0, TF1)
UL_TFC10	(TF4, TF3, TF0, TF1)
UL_TFC11	(TF5, TF4, TF1, TF1)

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	DCCH
TFS	TF0, bits	1x0	0x99	0x40	0x148
	TF1, bits	1x39	1x53	1x40	1x148
	TF2, bits	1x42	1x63	N/A	N/A
	TF3, bits	1x55	1x76		
	TF4, bits	1x58	1x99		
	TF5, bits	1x65	N/A		

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1)
DL_TFC7	(TF1, TF0, TF0, TF1)
DL_TFC8	(TF2, TF1, TF0, TF1)
DL_TFC9	(TF3, TF2, TF0, TF1)
DL_TFC10	(TF4, TF3, TF0, TF1)
DL_TFC11	(TF5, TF4, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 39 bits RB6: 99 bits RB7: 40 bits	RB5: 39 bits RB6: No data RB7: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 42 bits RB6: 53 bits RB7: 40 bits	RB5: 42 bits RB6: 53 bits RB7: 40 bits
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 55 bits RB6: 63 bits RB7: 40 bits	RB5: 55 bits RB6: 63 bits RB7: 40 bits
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 58 bits RB6: 76 bits RB7: 40 bits	RB5: 58 bits RB6: 76 bits RB7: 40 bits
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 65 bits RB6: 99 bits RB7: 40 bits	RB5: 65 bits RB6: 99 bits RB7: 40 bits
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.

14.2.5a.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 (1x42) and RB6/TF1 (1x53)

    -   for sub-test 3: RB5/TF3 (1x55) and RB6/TF2 (1x63)

    -   for sub-test 4: RB5/TF4 (1x58) and RB6/TF3 (1x76)

    -   for sub-test 5: RB5/TF5 (1x65), RB6/TF4 (1x99) and RB7/TF1 (1x40)

3. At step 15 the UE shall return

    -   for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6 or RB7.

    -   for sub-test 2: an RLC SDU on RB5 and RB6 having the same content as sent by SS; and no data shall be received on RB7.

    -   for sub-test 3: an RLC SDU on RB5 and RB6 having the same content as sent by SS; and no data shall be received on RB7.

    -   for sub-test 4: an RLC SDU on RB5 and RB6 having the same content as sent by SS; and no data shall be received on RB7.

    -   for sub-test 5: an RLC SDU on each of RB5, RB6 and RB7 having the same content as sent by SS.

14.2.6   Conversational / speech / UL:7.95 DL:7.95 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.6.1   Conformance requirement

See clause 14.2.4.1.

14.2.6.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.6.

14.2.6.3   Method of test

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	0x75 (alt. 1x0)	0x84	0x148
	TF1, bits	1x39	1x84	1x148
	TF2, bits	1x75	N/A	N/A

Uplink TFCS:

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

Downlink TFS:

		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
TFS	TF0, bits	1x0	0x84	0x148
	TF1, bits	1x39	1x84	1x148
	TF2, bits	1x75	N/A	N/A

Downlink TFCS:

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

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 84 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5,	RB5: 75 bits RB6: 84 bits	RB5: 75 bits RB6: 84 bits
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.					

See clause 14.1.1 for test procedure.

14.2.6.4   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 (1x75) and RB6/TF1 (1x84).

3. At step 15 the UE shall return

    - for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.

    - for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS.

14.2.7   Conversational / speech / UL:7.4 DL:7.4 kbps / CS RAB+ UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.7.1   Conformance requirement

See clause 14.2.4.1.

14.2.7.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.7.

14.2.7.3   Method of test

Uplink TFS:

	TFI	**RB5 (RAB subflow #1)**	**RB6 (RAB subflow #2)**	**DCCH**
TFS	TF0, bits	0x61 (alt. 1x0)	0x87	0x148
	TF1, bits	1x39	1x87	1x148
	TF2, bits	1x61	N/A	N/A

Uplink TFCS:

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

Downlink TFS:

	RB5 (RAB subflow #1)	**RB6 (RAB subflow #2)**	**DCCH**
TFS	TF0, bits	1x0	0x87	0x148
	TF1, bits	1x39	1x87	1x148
	TF2, bits	1x61	N/A	N/A

Downlink TFCS:

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

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC1, UL_TFC3, UL_TFC4	RB5: 39 bits RB6: 87 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC3, UL_TFC0, UL_TFC3	UL_TFC0, UL_TFC2, UL_TFC3, UL_TFC5,	RB5: 61 bits RB6: 87 bits	RB5: 61 bits RB6: 87 bits
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.

14.2.7.4   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 (1x61) and RB6/TF1 (1x87).

3. At step 15 the UE shall return

    -   for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.

    -   for sub-test 2: an RLC SDU on each of RB5 and RB6 having the same content as sent by SS

14.2.7a Conversational / speech / UL:(7.4, 6.7, 5.9, 4.75) DL:(7.4, 6.7, 5.9, 4.75) kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH.

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.7a.

14.2.7a.1   Conformance requirement

See clause 14.2.4.1.

14.2.7a.2   Test purpose

To verify radio bearer establishment and correct data transfer for reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.7a.

14.2.7a.3   Method of test

Uplink TFS:

	TFI	**RB5 (RAB subflow #1)**	**RB6 (RAB subflow #2)**	**DCCH**
TFS	TF0, bits	0x61(alt. 1x0)	0x87	0x148
	TF1, bits	1x39	1x53	1x148
	TF2, bits	1x42	1x63	N/A
	TF3, bits	1x55	1x76	
	TF4, bits	1x58	1x87	
	TF5, bits	1x61	N/A	

Uplink TFCS:

TFCI	**(RB5, RB6, RB7,DCCH)**
UL_TFC0	(TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0)
UL_TFC3	(TF3, TF2, TF0)
UL_TFC4	(TF4, TF3, TF0)
UL_TFC5	(TF5, TF4, TF0)
UL_TFC6	(TF0, TF0, TF1)
UL_TFC7	(TF1, TF0, TF1)
UL_TFC8	(TF2, TF1, TF1)
UL_TFC9	(TF3, TF2, TF1)
UL_TFC10	(TF4, TF3, TF1)
UL_TFC11	(TF5, TF4, TF1)

Downlink TFS:

TFS		RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	DCCH
	TF0, bits	1x0	0x87	0x148
	TF1, bits	1x39	1x53	1x148
	TF2, bits	1x42	1x63	N/A
	TF3, bits	1x55	1x76	
	TF4, bits	1x58	1x87	
	TF5, bits	1x61	N/A	

Downlink TFCS:

TFCI	(RB5, RB6, RB7, DCCH)
DL_TFC0	(TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0)
DL_TFC3	(TF3, TF2, TF0)
DL_TFC4	(TF4, TF3, TF0)
DL_TFC5	(TF5, TF4, TF0)
DL_TFC6	(TF0, TF0, TF1)
DL_TFC7	(TF1, TF0, TF1)
DL_TFC8	(TF2, TF1, TF1)
DL_TFC9	(TF3, TF2, TF1)
DL_TFC10	(TF4, TF3, TF1)
DL_TFC11	(TF5, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (note)	Test data size (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 39 bits RB6: 87 bits	RB5: 39 bits RB6: No data
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 42 bits RB6: 53 bits	RB5: 42 bits RB6: 53 bits
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 55 bits RB6: 63 bits	RB5: 55 bits RB6: 63 bits
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 58 bits RB6: 76 bits	RB5: 58 bits RB6: 76 bits
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 61 bits RB6: 87 bits	RB5: 61 bits RB6: 87 bits
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.

14.2.7a.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 (1x42) and RB6/TF1 (1x53)

    -   for sub-test 3: RB5/TF3 (1x55) and RB6/TF2 (1x63)

    -   for sub-test 4: RB5/TF4 (1x58) and RB6/TF3 (1x76)

    -   for sub-test 5: RB5/TF5 (1x61) and RB6/TF4 (1x87)

3. At step 15 the UE shall return

    -   for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6.

    -   for sub-test 2: an RLC SDU on RB5 and RB6 having the same content as sent by SS.

    -   for sub-test 3: an RLC SDU on RB5 and RB6 having the same content as sent by SS.

    -   for sub-test 4: an RLC SDU on RB5 and RB6 having the same content as sent by SS.

    -   for sub-test 5: an RLC SDU on RB5 and RB6 having the same content as sent by SS.

2. At step 15 the UE transmitted transport format shall be

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

Tdoc T1-020348

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

Tdoc T1S-020160

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1** CR **223** | ⌘ | 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	CR on Clause 3.1	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	***Date:*** ⌘ 25th March 2002
Category: ⌘ **F**		***Release:*** ⌘ Rel-4

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

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

Reason for change: ⌘	Missing definition of ceil and floor	
Summary of change: ⌘	The expressions "ceil" and "floor" used in layer 2 test cases are defined.	
Consequences if not approved: ⌘	Missing definitions of mathematical expressions. Unclear specifications.	

Clauses affected: ⌘	3.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Affects both R99 and REL-4 specifications

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 apply, unless specified below:

example: text used to clarify abstract rules by applying them literally

Floor: Floor(x) is the largest integer smaller than or equal to x.

Ceil: Ceil (x) is the smallest integer larger than or equal to x.

Tdoc T1-020349

Tdoc T1S-020176

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1 CR 224** | ⌘ 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Correction to RLC conformance test 7.2.2.1	
Source: ⌘	Ericsson	
Work item code: ⌘	TEI	**Date:** ⌘ 25th March 2002
Category: ⌘	**F**	**Release:** ⌘ Rel-4

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

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

Reason for change: ⌘	It is currently unclear if the special LI indicating that an SDU nbegins in the beginning of a PDU (defined in TS 25.322) is used or not in the RLC test cases, especially in downlink.
Summary of change: ⌘	It is clarified that the special LI is not used in uplink or downlink, except when explicitly specified (e.g. in 7.2.2.7 where the special LI is tested explicitly).
Consequences if not approved: ⌘	Unclear text

Clauses affected: ⌘	7.2.2.1
Other specs affected: ⌘	☐ Other core specifications ⌘
	☐ Test specifications
	☐ 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.

7.2.2.1 General information for UM tests

Two generic Radio Access Bearers are provided for UM tests.

The UM test RAB is set up using the Generic Procedure described in clause 7.1.3 of 3GPP TS 34.108, and with the default RAB replaced as follows:

- For UM 7-bit length indicator tests: the RB configuration described in 3GPP TS 34.108 clause 6.11.1 is used. For these tests, let UM_7_PayloadSize denote the RAB payload size in octets.

- For UM 15-bit length indicator tests: the RB configuration described in 3GPP TS 34.108 clause 6.11.2 is used. For these tests, let UM_15_PayloadSize denote the RAB payload size in octets.

The UM test RABs are used in all tests with the following exception:

- Tests that explicitly specify a different Radio Bearer configuration.

All other settings are the same.

The special Length Indicator indicating that an SDU begins in the first octet of a PDU, described in clause 9.2.2.8 in 3GPP TS 25.322 is not used in uplink or downlink except when explicitly stated in the corresponding test case.

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1** CR **241** | ⌘ 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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to RLC conformance test 7.2.3.29	
Source: ⌘	Rohde & Schwarz	
Work item code: ⌘	TEI	***Date:*** ⌘ 28th 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: ⌘	1. Missing parameters in choice *Timer based with explicit signalling*
Summary of change: ⌘	1. If *Timer based with explicit signalling* is used for *Transmission RLC discard*, then the values of *Timer_RW* and *MAX_MRW* have to be indicated as well, because it is a sequence.
Consequences if not approved: ⌘	Test purpose cannot be reached

Clauses affected: ⌘	7.2.3.29
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	Affects both R99 and REL-4 specifications

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.

7.2.3.29   Timer based discard, with explicit signalling / Expiry of Timer_Discard

7.2.3.29.1   Definition

This case tests that when the transmission of an SDU exceeds a time limit, the SDU is discarded by the sender, and the discard is signalled to the receiver. SDU discard is used to keep network delays within limits, and incorrect operation will effect the quality of service.

7.2.3.29.2   Conformance requirement

If the transmission time exceeds a predefined value for a SDU in acknowledged mode RLC, this SDU is discarded in the transmitter and a Move Receiving Window (MRW) command is sent to the receiver so that AMD PDUs carrying that SDU are discarded in the receiver and the receiver window is updated accordingly.

This procedure is initiated by the sender when the following conditions are fulfilled … Timer based SDU discard with explicit signalling is used, and Timer_Discard expires for an SDU.

This status report is sent even if the 'STATUS prohibit' is used and the timer 'Timer_Status_Prohibit' is active.

The STATUS PDUs have higher priority than data PDUs.

Reference

TS 25.322 clauses 9.7.3.1, 11.3.4.3.1 and 11.6.

7.2.3.29.3   Test purpose

1. To verify that if the transmission time for an SDU exceeds Timer_Discard, the SDU is discarded in the transmitter and the MRW procedure is invoked.

2. ...

7.2.3.29.4   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	
Timer based with explicit signalling	
Timer_MRW	500
Timer_Discard	1000
MAX_MRW	4

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

a) The SS sends at least 2 RLC SDUs of size AM_7_PayloadSize – 1bytes.

b) The SS notes the time that the first RLC PDU is received on the uplink. This time will be recorded as T_1.

c) 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.

d) The SS monitors received STATUS PDUs for the presence of a MRW SUFI, noting the time it was received. This time will be recorded as T_2.

e) The SS responds to the MRW command with a correct MRW_ACK.

f) Void.

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 2
3	→		UPLINK RLC PDU	SDU 1: Note T_1
4	→		…	SS continues to receive RLC PDUs
5	→		UPLINK RLC PDU	SDU 2 + Poll
6		←	STATUS PDU	NAK SN=0
7	→		…	SS continues to receive RLC PDU with SN=0 + Poll
8		←	…	STATUS PDU, SS continues to NAK PDU with SN=0
9	→		STATUS PDU	MRW Command: Note T_2
10		←	STATUS PDU	MRW_ACK
11			RB RELEASE	Optional step

7.2.3.29.5   Test requirements

1. The measured time $T_2 - T_1$ should be 1000 ms.

2. The STATUS PDU received in step 9 shall contain a MRW SUFI indicating that the first three PDUs should be discarded, and that the data indicated in the fourth PDU by the first LI should also be discarded.

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1** CR **242** | ⌘ | 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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Correction to RLC conformance test 7.2.3.30	
Source: ⌘	Rohde & Schwarz	
Work item code: ⌘	TEI	***Date:*** ⌘ 28th March 2002
Category: ⌘	**F**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	1. Incorrect Uplink RLC configuration
Summary of change: ⌘	1. Two choices *MaxDAT Retransmissions* and *Timer based with explicit signalling* were used at the same time. Therefore the parameters belonging to *Timer based with explicit signalling* parmeters were removed from the Uplink RLC configuration and the missing *Timer_MRW* and *MAX_MRW* parameters were added.
Consequences if not approved: ⌘	Test purpose cannot be reached

Clauses affected: ⌘	7.2.3.30
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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.

7.2.3.30 Timer based discard, with explicit signalling / Obsolete MRW_ACK

7.2.3.30.1 Definition

This case tests the ability of the receiving AM RLC entity to handle obsolete information that can be received during a failure of the SDU discard procedure. SDU discard is used to keep network delays within limits, and incorrect operation will effect the quality of service.

7.2.3.30.2 Conformance requirement

If Timer_MRW expires before the discard procedure is terminated,the MRW SUFI shall be retransmitted, VT(MRW) is incremented by one and Timer_MRW restarted. MRW SUFI shall be exactly the same as previously transmitted even though some new SDUs would have been discarded during the running of the Timer_MRW.

The received MRW_ACK shall be discarded in the following cases.

1. …

2. If the SN_ACK field in the received MRW_ACK $<$ SN_MRW$_{LENGTH}$ in the transmitted MRW SUFI.

3. If the SN_ACK field in the received MRW_ACK is equal to the SN_MRW$_{LENGTH}$ in the transmitted MRW SUFI and the N field in the received MRW_ACK is not equal to the N$_{LENGTH}$ field in the transmitted MRW SUFI

4. If the SN_ACK field in the received MRW_ACK $>$ SN_MRW$_{LENGTH}$ in the transmitted MRW SUFI and the N field in the received MRW_ACK is not equal to zero.

Reference

TS 25.322 clauses 11.6.5 and 11.6.6.3.

7.2.3.30.3 Test purpose

1. To verify that the MRW SUFI is retransmitted if Timer_MRW expires before a valid MRW_ACK is received.

2. To verify that the MRW_ACK is discarded if the SN_ACK field $<$ SN_MRW$_{LENGTH}$.

3. To verify that the MRW_ACK is discarded if the N field is not equal to N$_{LENGTH}$ transmitted in the MRW SUFI.

4. To verify that the MRW_ACK is discarded if the N field is not zero and the SN_ACK field $>$ SN_MRW$_{LENGTH}$ in the transmitted MRW SUFI.

7.2.3.30.4 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	
MaxDAT Retransmissions	
MaxDAT	40
Timer_MRW	500
MAX_MRW	4
Timer based with explicit signalling	
Timer_MRW	500
Timer_Discard	1000
MaxMRW	4

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 – 1bytes.

Test procedure

a) The SS sends at least 2 RLC SDUs of size AM_7_PayloadSize – 1bytes.

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 monitors received STATUS PDUs for the presence of a MRW SUFI, noting the time it was received. This time will be recorded as T_1.

d) The SS responds to the MRW command with an MRW_ACK with the SN_ACK field set to $SN\_MRW_{LENGTH} - 1$.

e) The SS monitors received STATUS PDUs for another MRW SUFI, noting the time it was received. This time will be recorded as T_2.

f) The SS responds to the MRW command with an MRW_ACK with the SN_ACK field set to SN_MRW_{LENGTH}, and the N field set to $(N_{LENGTH} + 1)$ modulo 4.

g) The SS monitors received STATUS PDUs for another MRW SUFI, noting the time it was received. This time will be recorded as T_3.

h) The SS responds to the MRW command with an MRW_ACK with the SN_ACK field set to $SN\_MRW_{LENGTH} + 1$, and the N field set to 1.

i) The SS monitors received STATUS PDUs for another MRW SUFI.

j) The SS responds to the MRW command with a correct MRW_ACK.

k) 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 2
3	→		UPLINK RLC PDU	SDU 1
4	→		UPLINK RLC PDU	SDU 2 + Poll
5	←		STATUS PDU	NAK SN=0
6	→		…	SS continues to receive RLC PDU with SN=0 + Poll
7	←		...	STATUS PDU, SS continues to NAK PDU with SN=0
8	→		STATUS PDU	MRW Command: Note T_1
9	←		STATUS PDU	MRW_ACK, SN_ACK = $SN\_MRW_{LENGTH} - 1$
10	→		STATUS PDU	MRW Command: Note T_2
11	←		STATUS PDU	MRW_ACK, N field = $(N_{LENGTH} + 1)$ modulo 4
12	→		STATUS PDU	MRW Command: Note T_3
13	←		STATUS PDU	MRW_ACK, SN_ACK = $SN\_MRW_{LENGTH} + 1$, N field = 1
14	→		STATUS PDU	MRW Command
15	←		STATUS PDU	MRW_ACK
16			RB RELEASE	Optional step

7.2.3.30.5   Test requirements

1. The measured time $T_2 - T_1$ should be 500 ms.

2. The measured time $T_3 - T_2$ should be 500 ms.

3. The STATUS PDUs received in steps 8, 10, 12 and 14 shall contain an identical MRW SUFI.

CR-Form-v4

CHANGE REQUEST

| ⌘ | **34.123-1** CR **243** | ⌘ | ev | **-** | ⌘ | Current version: | **4.2.0** | ⌘ |

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

Title: ⌘	Correction to RLC conformance test 7.2.3.31	
Source: ⌘	Rohde & Schwarz	
Work item code: ⌘	TEI	***Date:*** ⌘ 28th 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: ⌘	1. Incorrect Uplink RLC configuration
Summary of change: ⌘	1. Two choices *MaxDAT Retransmissions* and *Timer based with explicit signalling* were used at the same time. The choice *MaxDAT Retransmissions* was removed
Consequences if not approved: ⌘	Test purpose cannot be reached

Clauses affected: ⌘	7.2.3.31
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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.

7.2.3.31   Timer based discard, with explicit signalling / Failure of MRW procedure

7.2.3.31.1   Definition

This case tests that if a failure occurs during the signalling of an SDU discard to the receiver, the retransmission protocol operates correctly. SDU discard is used to keep network delays within limits, and incorrect operation will effect the quality of service.

7.2.3.31.2   Conformance requirement

If the number of retransmission of a MRW command (i.e. VT(MRW)) reaches MaxMRW, an error indication shall be passed to RRC and RESET procedure shall be performed.

Reference

TS 25.322 clause 11.6.6.2.

7.2.3.31.3   Test purpose

1. To verify that when the number of retransmissions of a MRW command reaches MaxMRW, an error indication is passed to RRC and RESET procedure is initiated.

7.2.3.31.4   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	
~~MaxDAT Retransmissions~~	
~~MaxDAT~~	~~40, See Note~~
Timer based with explicit signalling	
Timer_MRW	500
Timer_Discard	500
Max_MRW	4
Polling info	
Poll_PDU	2
~~Note: MaxDat is set to 40 to avoid SDU discard during the test due to VT(DAT) ≥ MaxDAT.~~	

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) – 1bytes.

Test procedure

a) The SS sends 4 RLC SDUs of size (2 * AM_7_PayloadSize) – 1bytes.

b) The SS checks the RLC PDUs received on the uplink and responds to all poll requests as follows: While the VR(H) is 4 or less, with a STATUS PDU, negatively acknowledging the RLC PDU with sequence number 0, and positively acknowledging all other RLC PDUs received. While the VR(H) is greater than 4, a STATUS PDU negatively acknowledging RLC PDUs with sequence numbers 0 and 4, and positively acknowledging all others.

c) The SS monitors received STATUS PDUs for the presence of an MRW SUFI, noting the time it was received. This time will be recorded as T_1.

d) The SS makes no response, but monitors for the next STATUS PDU containing an MRW SUFI, noting the time it was received. This time will be recorded as T_2.

e) The SS sends a STATUS PDU with an MRW_ACK indicating the discard of SDU 1 moving VR(R) to 4.

f) The SS monitors for further STATUS PDUs containing an MRW SUFI, or for a RESET PDU. The SS records the number of STATUS PDUs it received with MRW SUFI before it received the RESET PDU.

g) The SS checks any RLC SDUs reassembled from the uplink.

h) 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	←		…	SS continues to send RLC PDUs
5	←		DOWNLINK RLC PDU	SDU 4
6	→		UPLINK RLC PDU	SDU 1
7	→		…	SS continues to receive RLC PDUs
8	→		UPLINK RLC PDU	Poll
9	←		STATUS PDU	NAK SN=0
10	→		…	SS continues to receive RLC PDUs
11	→		UPLINK RLC PDU	Poll
12	←		STATUS PDU	NAK SN=0, 4
13	→		…	SS continues to receive RLC PDUs
14	→		STATUS PDU	MRW Command: Note T_1
15	→		STATUS PDU	MRW Command: Note T_2
16	←		STATUS PDU	MRW_ACK indicating VR(R) = 4
17	→		STATUS PDU	MRW Command, discard SDU 3
18	→		STATUS PDU	MRW Command
19	→		STATUS PDU	MRW Command
20	→		STATUS PDU	MRW Command
21	→		RESET PDU	
22	←		RESET ACK PDU	
23			RB RELEASE	Optional step

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

7.2.3.31.5   Test requirements

The measured time $T_2 - T_1$ should be 500 ms.

After step 17, the SS should detect 3 repeats of the MRW command sent in step 17 before a RESET PDU is sent.

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

Tdoc T1-020414

3GPP TSG-T1/SIG Meeting #23
Lund, Sweden, 21-23 May 2002

Tdoc T1S-020300

CR-Form-v5.1

CHANGE REQUEST

| ⌘ | **TS 34.123-1 CR 245** | ⌘**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 **X**   Radio Access Network ☐   Core Network ☐

Title:	⌘	Update of package 2 radio bearer test cases
Source:	⌘	Ericsson
Work item code: ⌘	TEI	*Date:* ⌘ 2002-05-18
Category:	⌘ **F**	*Release:* ⌘ REL-4

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

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

Reason for change: ⌘	1.	Update of package 2 test case 14.2.41 according to test method for testing multiple RBs and simultaneous signalling needed.
	2.	Correction to radio bearer test cases based on comments from ETSI/MCC.

Summary of change: ⌘ Test case 14.2.27:

- Correction of UL RLC SDU size for sub-test 3 (to achieve verification of all bits in the DL SDU)

Test case 14.2.29:

- Correction of mismatch between test case and 34.108 for DL_TFC5

- Correction of UL RLC SDU size for sub-test 3 (to achieve verification of all bits in the DL SDU)

Test case 14.2.30:

- Correction of mismatch between test case and 34.108 for UL_TFC5 and DL_TFC5

Test case 14.2.31.1, 14.2.31.2, 14.2.32.1 and 14.2.32.2:

- Correction of UL RLC SDU size for sub-test 3 (to achieve verification of all bits in the DL SDU)

Test case 14.2.33.1:

- Correction of uplink TFS used in sub-test 5 (to enable for UE to return the whole DL SDU received from SS)

Test case 14.2.35.1 and 14.2.35.2:

- Correction of UL RLC SDU size in sub-test 3 (to enable for UE to return

the whole DL SDU received from SS)

Test case 14.2.36.1 and 14.2.36.2:

- Added note for clarification to sub-test table

Test case 14.2.37.1:

- Correction of UL RLC SDU size in sub-test 6,7,9 and 10 (to enable for UE to return the whole DL SDU received from SS)

Test case 14.2.37.2:

- Correction of UL RLC SDU size in sub-test 9,10,11,12,13,15,16,17 and 18 (to enable for UE to return the whole DL SDU received from SS)

Test case 14.2.41:

- Update according to the radio bearer test method for testing multiple RBs and simultaneous signalling

Test case 14.3.1.1, 14.3.1.2, 14.3.2.1, 14.3.2.2, 14.3.3.1 and 14.3.3.2:

- Corrected test data size and UL RLC SDU size to be multiple of payload size minus size of 7 bit length indicator and expansion bit.

Consequences if not approved:	⌘	Not correct RB test cases Testing of multi radio bearer configuration and simultaneous signalling not possible.

Clauses affected:	⌘	14.2.27, 14.2.29, 14.2.30, 14.2.31, 14.2.32, 14.3.33, 14.3.35, 14.3.37, 14.2.41, 14.3.1, 14.3.2, 14.3.3	
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>

14.2.27 Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.27.1 Conformance requirement

See 14.2.4.1.

14.2.27.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.27.

14.2.27.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (128 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF0, TF1)
DL_TFC6	(TF1, TF1)
DL_TFC7	(TF2, TF1)
DL_TFC8	(TF3, TF1)
DL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly 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: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 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.

14.2.27.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

<End of modified section>

<Start of next modified section>

14.2.29 Interactive or background / UL:64 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.29.1 Conformance requirement

See 14.2.4.1.

14.2.29.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.29.

14.2.29.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (144 kbps)	DCCH
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	9x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, ~~TF1~~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)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872	RB5: 2872
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.

14.2.29.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

    - for sub-test 1: RB5/TF1 (1x336).

    - for sub-test 2: RB5/TF2 (2x336).

    - for sub-test 3: RB5/TF3 (4x336).

    - for sub-test 4: RB5/TF4 (8x336).

    - for sub-test 5: RB5/TF3 (4x336).

3. At step 15 the UE shall return

    - for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

<End of modified section>

<Start of next modified section>

14.2.30 Interactive or background / UL:144 DL:144 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.30.1 Conformance requirement

See 14.2.4.1.

14.2.30.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.30.

14.2.30.3 Method of test

Uplink TFS:

	TFI	RB5 (144 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	9x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Downlink TFS:

	TFI	RB5 (144 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	9x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF04)
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)	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: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 2872	RB5: 2872
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.

14.2.30.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4: RB5/TF4 (8x336).

   - for sub-test 5: RB5/TF5 (9x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.31 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.31.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH/ 10 ms TTI

14.2.31.1.1 Conformance requirement

See 14.2.4.1.

14.2.31.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.31 for the downlink 10 ms TTI case.

14.2.31.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (256 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF0, TF1)
DL_TFC6	(TF1, TF1)
DL_TFC7	(TF2, TF1)
DL_TFC8	(TF3, TF1)
DL_TFC9	(TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly 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: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC5, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 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.

14.2.31.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.31.2 Interactive or background / UL:64 DL:256 kbps / PS RAB / 20 ms TTI

14.2.31.2.1 Conformance requirement

See 14.2.4.1.

14.2.31.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.31 for the downlink 20 ms TTI case.

14.2.31.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (256 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF0, TF1)
DL_TFC8	(TF1, TF1)
DL_TFC9	(TF2, TF1)
DL_TFC10	(TF3, TF1)
DL_TFC11	(TF4, TF1)
DL_TFC12	(TF5, TF1)
DL_TFC13	(TF6, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.						

See 14.1.1 for test procedure.

14.2.31.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

- for sub-test 3: RB5/TF3 (3x336).

- for sub-test 4 to 6: RB5/TF4 (4x336).

3. At step 15 the UE shall return

- for sub-test 1 to 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.32 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.32.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.2.32.1.1 Conformance requirement

See 14.2.4.1.

14.2.32.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.32 for the 10 ms TTI case.

14.2.32.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF0, TF1)
DL_TFC7	(TF1, TF1)
DL_TFC8	(TF2, TF1)
DL_TFC9	(TF3, TF1)
DL_TFC10	(TF4, TF1)
DL_TFC11	(TF5, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
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.

14.2.32.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4 and 5: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.32.2   Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.2.32.2.1   Conformance requirement

See 14.2.4.1.

14.2.32.2.2   Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.32 for the 20 ms TTI case.

14.2.32.2.3   Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Downlink TFCS:

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

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~1272~~1912	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC9, , UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 6392	RB5: 6392
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.					

See 14.1.1 for test procedure.

14.2.32.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4 to 8: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.33 Interactive or background / UL:128 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.33.1 Interactive or background / UL:128 DL:384 kbps / PS RAB / 10 ms TTI

14.2.33.1.1 Conformance requirement

See 14.2.4.1.

14.2.33.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.33 for the 10 ms TTI case.

14.2.33.1.3 Method of test

Uplink TFS:

	TFI	**RB5 (128 kbps)**	**DCCH**
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Uplink TFCS:

TFCI	**(RB5, DCCH)**
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF0, TF1)
DL_TFC7	(TF1, TF1)
DL_TFC8	(TF2, TF1)
DL_TFC9	(TF3, TF1)
DL_TFC10	(TF4, TF1)
DL_TFC11	(TF5, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC43	DL_TFC0, DL_TFC6, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC34, UL_TFC5, UL_TFC89	RB5: 3832	RB5: 3832
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.33.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4 and 5: RB5/TF4 (8x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.33.2 Interactive or background / UL:128 DL:384 kbps / PS RAB / 20 ms TTI

14.2.33.2.1 Conformance requirement

See 14.2.4.1.

14.2.33.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.33 for the 20 ms TTI case.

14.2.33.2.3 Method of test

Uplink TFS:

	TFI	RB5 (128 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Downlink TFCS:

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

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC34	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5,	UL_TFC0, UL_TFC34, UL_TFC5, UL_TFC89	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
7	DL_TFC7	UL_TFC34	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC34, UL_TFC5, UL_TFC89	RB5: 6392	RB5: 6392
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4 UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.33.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4 to 8: RB5/TF4 (8x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.34 Interactive or background / UL:384 DL:384 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.34.1 Interactive or background / UL:384 DL:384 kbps / PS RAB / 10 ms TTI

14.2.34.1.1 Conformance requirement

See 14.2.4.1.

14.2.34.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.34 for the 10 ms TTI case.

14.2.34.1.3 Method of test

Uplink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF0, TF1)
DL_TFC7	(TF1, TF1)
DL_TFC8	(TF2, TF1)
DL_TFC9	(TF3, TF1)
DL_TFC10	(TF4, TF1)
DL_TFC11	(TF5, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC7	UL_TFC0, UL_TFC1, UL_TFC7, UL_TFC8	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC7	UL_TFC0, UL_TFC2, UL_TFC7, UL_TFC9	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC7	UL_TFC0, UL_TFC3, UL_TFC7, UL_TFC10	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC7	UL_TFC0, UL_TFC4, UL_TFC7, UL_TFC11	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC7, UL_TFC0, UL_TFC7	UL_TFC0, UL_TFC5, UL_TFC7, UL_TFC12	RB5: 3832	RB5: 3832
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.

14.2.34.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

    - for sub-test 1: RB5/TF1 (1x336).

    - for sub-test 2: RB5/TF2 (2x336).

    - for sub-test 3: RB5/TF3 (4x336).

    - for sub-test 4: RB5/TF4 (8x336).

    - for sub-test 5: RB5/TF4 (12x336).

3. At step 15 the UE shall return

    - for sub-test 1 to 5: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.34.2 Interactive or background / UL:384 DL:384 kbps / PS RAB / 20 ms TTI

14.2.34.2.1 Conformance requirement

See 14.2.4.1.

14.2.34.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.34. for the 20 ms TTI case

14.2.34.2.3 Method of test

Uplink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
TFS	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF6, TF0)
UL_TFC7	(TF7, TF0)
UL_TFC8	(TF8, TF0)
UL_TFC9	(TF0, TF1)
UL_TFC10	(TF1, TF1)
UL_TFC11	(TF2, TF1)
UL_TFC12	(TF3, TF1)
UL_TFC13	(TF4, TF1)
UL_TFC14	(TF5, TF1)
UL_TFC15	(TF6, TF1)
UL_TFC16	(TF7, TF1)
UL_TFC17	(TF8, TF1)

Downlink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Downlink TFCS:

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

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC9, UL_TFC10	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC2, UL_TFC9, UL_TFC11	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 1272	RB5: 1272
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC4, UL_TFC9, UL_TFC13	RB5: 2552	RB5: 2552
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC5, UL_TFC9, UL_TFC14	RB5: 3832	RB5: 3832
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 5112	RB5: 5112
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC7, UL_TFC9, UL_TFC16	RB5: 6392	RB5: 6392
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC9, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC9, UL_TFC17	RB5: 7672	RB5: 7672
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.

14.2.34.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4: RB5/TF4 (8x336).

   - for sub-test 5: RB5/TF5 (12x336).

   - for sub-test 6: RB5/TF6 (16x336).

   - for sub-test 7: RB5/TF7 (20x336).

   - for sub-test 8: RB5/TF8 (24x336).

3. At step 15 the UE shall return

    - for sub-test 1 to 8: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.35 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.35.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 10 ms TTI

14.2.35.1.1 Conformance requirement

See 14.2.4.1.

14.2.35.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.35 for the 10 ms TTI case.

14.2.35.1.3 Method of test

Uplink TFS:

	TFI	**RB5 (64 kbps)**	**DCCH**
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	**(RB5, DCCH)**
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF0, TF1)
DL_TFC12	(TF1, TF1)
DL_TFC13	(TF2, TF1)
DL_TFC14	(TF3, TF1)
DL_TFC15	(TF4, TF1)
DL_TFC16	(TF5, TF1)
DL_TFC17	(TF6, TF1)
DL_TFC18	(TF7, TF1)
DL_TFC19	(TF8, TF1)
DL_TFC20	(TF9, TF1)
DL_TFC21	(TF10, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~2552~~2872	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.35.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

- for sub-test 3: RB5/TF3 (3x336).

- for sub-test 4 to 10: RB5/TF4 (4x336).

3. At step 15 the UE shall return

- for sub-test 1 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.35.2   Interactive or background / UL:64 DL:2048 kbps / PS RAB / 20 ms TTI

14.2.35.2.1   Conformance requirement

See 14.2.4.1.

14.2.35.2.2   Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.35 for the 20 ms TTI case.

14.2.35.2.3   Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A
	TF11, bits	36x656	N/A
	TF12, bits	40x656	N/A
	TF13, bits	44x656	N/A
	TF14, bits	48x656	N/A
	TF15, bits	52x656	N/A
	TF16, bits	56x656	N/A
	TF17, bits	60x656	N/A
	TF18, bits	64x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF11, TF0)
DL_TFC12	(TF12, TF0)
DL_TFC13	(TF13, TF0)
DL_TFC14	(TF14, TF0)
DL_TFC15	(TF15, TF0)
DL_TFC16	(TF16, TF0)
DL_TFC17	(TF17, TF0)
DL_TFC18	(TF18, TF0)
DL_TFC19	(TF0, TF1)
DL_TFC20	(TF1, TF1)
DL_TFC21	(TF2, TF1)
DL_TFC22	(TF3, TF1)
DL_TFC23	(TF4, TF1)
DL_TFC24	(TF5, TF1)
DL_TFC25	(TF6, TF1)
DL_TFC26	(TF7, TF1)
DL_TFC27	(TF8, TF1)
DL_TFC28	(TF9, TF1)
DL_TFC29	(TF10, TF1)
DL_TFC30	(TF11, TF1)
DL_TFC31	(TF12, TF1)
DL_TFC32	(TF13, TF1)
DL_TFC33	(TF14, TF1)
DL_TFC34	(TF15, TF1)

TFCI	(RB5, DCCH)
DL_TFC35	(TF16, TF1)
DL_TFC36	(TF17, TF1)
DL_TFC37	(TF18, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: ~~2552~~2872	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
11	DL_TFC11	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 23032	RB5: 23032
12	DL_TFC12	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25592	RB5: 25592
13	DL_TFC13	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4 UL_TFC5, UL_TFC9	RB5: 28152	RB5: 28152

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)
14	DL_TFC14	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 30712	RB5: 30712
15	DL_TFC15	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 33272	RB5: 33272
16	DL_TFC16	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 35832	RB5: 35832
17	DL_TFC17	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4 UL_TFC5, UL_TFC9	RB5: 38392	RB5: 38392
18	DL_TFC18	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 40952	RB5: 40952
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.35.2.4   Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4 to 18: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.36   Interactive or background / UL:128 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.36.1   Interactive or background / UL:128 DL:2048 kbps / PS RAB / 10 ms TTI

14.2.36.1.1   Conformance requirement

See 14.2.4.1.

14.2.36.1.2   Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.36 for the 10 ms TTI case.

14.2.36.1.3   Method of test

Uplink TFS:

	TFI	RB5 (128 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)

TFCI	(RB5, DCCH)
DL_TFC11	(TF0, TF1)
DL_TFC12	(TF1, TF1)
DL_TFC13	(TF2, TF1)
DL_TFC14	(TF3, TF1)
DL_TFC15	(TF4, TF1)
DL_TFC16	(TF5, TF1)
DL_TFC17	(TF6, TF1)
DL_TFC18	(TF7, TF1)
DL_TFC19	(TF8, TF1)
DL_TFC20	(TF9, TF1)
DL_TFC21	(TF10, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2552	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.36.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4 to 10: RB5/TF4 (8x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.36.2 Interactive or background / UL:128 DL:2048 kbps / PS RAB / 20 ms TTI

14.2.36.2.1 Conformance requirement

See 14.2.4.1.

14.2.36.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.36 for the 20 ms TTI case.

14.2.36.2.3 Method of test

Uplink TFS:

	TFI	**RB5 (128 kbps)**	**DCCH**
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A

Uplink TFCS:

TFCI	**(RB5, DCCH)**
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A
	TF11, bits	36x656	N/A
	TF12, bits	40x656	N/A
	TF13, bits	44x656	N/A
	TF14, bits	48x656	N/A
	TF15, bits	52x656	N/A
	TF16, bits	56x656	N/A
	TF17, bits	60x656	N/A
	TF18, bits	64x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF11, TF0)
DL_TFC12	(TF12, TF0)
DL_TFC13	(TF13, TF0)
DL_TFC14	(TF14, TF0)
DL_TFC15	(TF15, TF0)
DL_TFC16	(TF16, TF0)
DL_TFC17	(TF17, TF0)
DL_TFC18	(TF18, TF0)
DL_TFC19	(TF0, TF1)
DL_TFC20	(TF1, TF1)
DL_TFC21	(TF2, TF1)
DL_TFC22	(TF3, TF1)
DL_TFC23	(TF4, TF1)
DL_TFC24	(TF5, TF1)
DL_TFC25	(TF6, TF1)
DL_TFC26	(TF7, TF1)
DL_TFC27	(TF8, TF1)
DL_TFC28	(TF9, TF1)
DL_TFC29	(TF10, TF1)
DL_TFC30	(TF11, TF1)
DL_TFC31	(TF12, TF1)
DL_TFC32	(TF13, TF1)
DL_TFC33	(TF14, TF1)
DL_TFC34	(TF15, TF1)

TFCI	(RB5, DCCH)
DL_TFC35	(TF16, TF1)
DL_TFC36	(TF17, TF1)
DL_TFC37	(TF18, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2552	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472	RB5: 20472
11	DL_TFC11	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 23032	RB5: 23032
12	DL_TFC12	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25592	RB5: 25592
13	DL_TFC13	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 28152	RB5: 28152

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)
14	DL_TFC14	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 30712	RB5: 30712
15	DL_TFC15	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 33272	RB5: 33272
16	DL_TFC16	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 35832	RB5: 35832
17	DL_TFC17	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 38392	RB5: 38392
18	DL_TFC18	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 40952	RB5: 40952
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.36.2.4   Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

    -   for sub-test 1: RB5/TF1 (1x336).

    -   for sub-test 2: RB5/TF2 (2x336).

    -   for sub-test 3: RB5/TF3 (4x336).

    -   for sub-test 4 to 18: RB5/TF4 (8x336).

3. At step 15 the UE shall return

    -   for sub-test 1 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.37   Interactive or background / UL:384 DL:2048 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.37.1   Interactive or background / UL:384 DL:2048 kbps / PS RAB / 10 ms TTI

14.2.37.1.1   Conformance requirement

See 14.2.4.1.

14.2.37.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.37 for the 10 ms TTI case.

14.2.37.1.3 Method of test

Uplink TFS:

	TFI	RB5 (384 kbps, 10ms)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF0, TF1)
UL_TFC7	(TF1, TF1)
UL_TFC8	(TF2, TF1)
UL_TFC9	(TF3, TF1)
UL_TFC10	(TF4, TF1)
UL_TFC11	(TF5, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)

TFCI	(RB5, DCCH)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF0, TF1)
DL_TFC12	(TF1, TF1)
DL_TFC13	(TF2, TF1)
DL_TFC14	(TF3, TF1)
DL_TFC15	(TF4, TF1)
DL_TFC16	(TF5, TF1)
DL_TFC17	(TF6, TF1)
DL_TFC18	(TF7, TF1)
DL_TFC19	(TF8, TF1)
DL_TFC20	(TF9, TF1)
DL_TFC21	(TF10, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC1, UL_TFC6, UL_TFC7	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC2, UL_TFC6, UL_TFC8	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3, UL_TFC6, UL_TFC9	RB5: 2552	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4, UL_TFC6, UL_TFC10	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC4~~5~~	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4~~5~~, UL_TFC6, UL_TFC10~~1~~	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC3~~5~~	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3~~5~~, UL_TFC6, UL_TFC9~~11~~	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC5	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC5, UL_TFC6, UL_TFC11	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC3~~5~~	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC3~~5~~, UL_TFC6, UL_TFC9~~11~~	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC4~~5~~	DL_TFC0, DL_TFC11, UL_TFC0, UL_TFC6	UL_TFC0, UL_TFC4~~5~~, UL_TFC6, UL_TFC10~~1~~	RB5: 20472	RB5: 20472
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.37.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (4x336).

   - for sub-test 4: RB5/TF3 (8x336).

   - for sub-test 5 to 10: RB5/TF4 (12x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

14.2.37.2 Interactive or background / UL:384 DL:2048 kbps / PS RAB / 20 ms TTI

14.2.37.2.1 Conformance requirement

See 14.2.4.1.

14.2.37.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.37 for the 20 ms TTI case.

14.2.37.2.3 Method of test

Uplink TFS:

	TFI	RB5 (384 kbps, 20ms)	DCCH
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	4x336	N/A
TFS	TF4, bits	8x336	N/A
	TF5, bits	12x336	N/A
	TF6, bits	16x336	N/A
	TF7, bits	20x336	N/A
	TF8, bits	24x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF5, TF0)
UL_TFC6	(TF6, TF0)
UL_TFC7	(TF7, TF0)
UL_TFC8	(TF8, TF0)
UL_TFC9	(TF0, TF1)
UL_TFC10	(TF1, TF1)

TFCI	(RB5, DCCH)
UL_TFC11	(TF2, TF1)
UL_TFC12	(TF3, TF1)
UL_TFC13	(TF4, TF1)
UL_TFC14	(TF5, TF1)
UL_TFC15	(TF6, TF1)
UL_TFC16	(TF7, TF1)
UL_TFC17	(TF8, TF1)

Downlink TFS:

	TFI	RB5 (2048 kbps, 10ms)	DCCH
TFS	TF0, bits	0x656	0x148
	TF1, bits	1x656	1x148
	TF2, bits	2x656	N/A
	TF3, bits	4x656	N/A
	TF4, bits	8x656	N/A
	TF5, bits	12x656	N/A
	TF6, bits	16x656	N/A
	TF7, bits	20x656	N/A
	TF8, bits	24x656	N/A
	TF9, bits	28x656	N/A
	TF10, bits	32x656	N/A
	TF11, bits	36x656	N/A
	TF12, bits	40x656	N/A
	TF13, bits	44x656	N/A
	TF14, bits	48x656	N/A
	TF15, bits	52x656	N/A
	TF16, bits	56x656	N/A
	TF17, bits	60x656	N/A
	TF18, bits	64x656	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC5	(TF5, TF0)
DL_TFC6	(TF6, TF0)
DL_TFC7	(TF7, TF0)
DL_TFC8	(TF8, TF0)
DL_TFC9	(TF9, TF0)
DL_TFC10	(TF10, TF0)
DL_TFC11	(TF11, TF0)
DL_TFC12	(TF12, TF0)
DL_TFC13	(TF13, TF0)
DL_TFC14	(TF14, TF0)
DL_TFC15	(TF15, TF0)
DL_TFC16	(TF16, TF0)
DL_TFC17	(TF17, TF0)
DL_TFC18	(TF18, TF0)
DL_TFC19	(TF0, TF1)
DL_TFC20	(TF1, TF1)
DL_TFC21	(TF2, TF1)
DL_TFC22	(TF3, TF1)
DL_TFC23	(TF4, TF1)
DL_TFC24	(TF5, TF1)

TFCI	(RB5, DCCH)
DL_TFC25	(TF6, TF1)
DL_TFC26	(TF7, TF1)
DL_TFC27	(TF8, TF1)
DL_TFC28	(TF9, TF1)
DL_TFC29	(TF10, TF1)
DL_TFC30	(TF11, TF1)
DL_TFC31	(TF12, TF1)
DL_TFC32	(TF13, TF1)
DL_TFC33	(TF14, TF1)
DL_TFC34	(TF15, TF1)
DL_TFC35	(TF16, TF1)
DL_TFC36	(TF17, TF1)
DL_TFC37	(TF18, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC1	UL_TFC1	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC1, UL_TFC9, UL_TFC10	RB5: 632	RB5: 632
2	DL_TFC2	UL_TFC2	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC2, UL_TFC9, UL_TFC11	RB5: 1272	RB5: 1272
3	DL_TFC3	UL_TFC3	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3, UL_TFC9, UL_TFC12	RB5: 2552	RB5: 2552
4	DL_TFC4	UL_TFC4	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC4, UL_TFC9, UL_TFC13	RB5: 5112	RB5: 5112
5	DL_TFC5	UL_TFC5	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC5, UL_TFC9, UL_TFC14	RB5: 7672	RB5: 7672
6	DL_TFC6	UL_TFC6	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC6, UL_TFC9, UL_TFC15	RB5: 10232	RB5: 10232
7	DL_TFC7	UL_TFC7	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC7, UL_TFC9, UL_TFC16	RB5: 12792	RB5: 12792
8	DL_TFC8	UL_TFC8	DL_TFC0, DL_TFC19, , UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC9, UL_TFC17	RB5: 15352	RB5: 15352
9	DL_TFC9	UL_TFC3~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3~~8~~, UL_TFC9, UL_TFC12~~7~~	RB5: 17912	RB5: 17912
10	DL_TFC10	UL_TFC6~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC6~~8~~, UL_TFC9, UL_TFC15~~7~~	RB5: 20472	RB5: 20472

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	UL_TFC3~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3~~8~~, UL_TFC9, UL_TFC12~~7~~	RB5: 23032	RB5: 23032
12	DL_TFC12	UL_TFC7~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC7~~8~~, UL_TFC9, UL_TFC16~~7~~	RB5: 25592	RB5: 25592
13	DL_TFC13	UL_TFC3~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3~~8~~, UL_TFC9, UL_TFC12~~7~~	RB5: 28152	RB5: 28152
14	DL_TFC14	UL_TFC8	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC8, UL_TFC9, UL_TFC17	RB5: 30712	RB5: 30712
15	DL_TFC15	UL_TFC3~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC3~~8~~, UL_TFC9, UL_TFC12~~7~~	RB5: 33272	RB5: 33272
16	DL_TFC16	UL_TFC4~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC4~~8~~, UL_TFC9, UL_TFC13~~7~~	RB5: 35832	RB5: 35832
17	DL_TFC17	UL_TFC7~~8~~	DL_TFC0, DL_TFC19, UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC7~~8~~, UL_TFC9, UL_TFC16~~7~~	RB5: 38392	RB5: 38392
18	DL_TFC18	UL_TFC6~~8~~	DL_TFC0, DL_TFC19, , UL_TFC0, UL_TFC9	UL_TFC0, UL_TFC6~~8~~, UL_TFC9, UL_TFC15~~7~~	RB5: 40952	RB5: 40952
NOTE:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. The UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					

See 14.1.1 for test procedure.

14.2.37.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

- for sub-test 1: RB5/TF1 (1x336).

- for sub-test 2: RB5/TF2 (2x336).

- for sub-test 3: RB5/TF3 (4x336).

- for sub-test 4: RB5/TF4 (8336).

- for sub-test 5: RB5/TF5 (12x336).

- for sub-test 6: RB5/TF6 (16x336).

- for sub-test 7: RB5/TF7 (20x336).

- for sub-test 8 to 18: RB5/TF4 (24x336).

3. At step 15 the UE shall return

- for sub-test 1 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

<End of modified section>

<Start of next modified section>

14.2.41 Conversational / speech / UL:12.2 DL:12.2 kbps / CS RAB + Interactive or background / UL:64 DL:128 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH

14.2.41.1 Conformance requirement

See 14.2.4.1.

14.2.41.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.41.

14.2.41.3 Method of test

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	0x81(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 (128 kbps, 20 ms TTI)	DCCH
TFS	TF0, bits	1x0	0x103	0x60	0x336	0x148
	TF1, bits	1x39	1x103	1x60	1x336	1x148
	TF2, bits	1x81	N/A	N/A	2x336	N/A
	TF3, bits	N/A	N/A	N/A	4x336	N/A
	TF4, bits	N/A	N/A	N/A	8x336	N/A

Downlink TFCS:

TFCI	(RB5, RB6, RB7, RB8, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF1, TF0, TF0)
DL_TFC3	(TF0, TF0, TF0, TF1, TF0)
DL_TFC4	(TF1, TF0, TF0, TF1, TF0)
DL_TFC5	(TF2, TF1, TF1, TF1, TF0)
DL_TFC6	(TF0, TF0, TF0, TF2, TF0)
DL_TFC7	(TF1, TF0, TF0, TF2, TF0)
DL_TFC8	(TF2, TF1, TF1, TF2, TF0)
DL_TFC9	(TF0, TF0, TF0, TF3, TF0)
DL_TFC10	(TF1, TF0, TF0, TF3, TF0)
DL_TFC11	(TF2, TF1, TF1, TF3, TF0)
DL_TFC12	(TF0, TF0, TF0, TF4, TF0)
DL_TFC13	(TF1, TF0, TF0, TF4, TF0)
DL_TFC14	(TF2, TF1, TF1, TF4, TF0)
DL_TFC15	(TF0, TF0, TF0, TF0, TF1)
DL_TFC16	(TF1, TF0, TF0, TF0, TF1)
DL_TFC17	(TF2, TF1, TF1, TF0, TF1)
DL_TFC18	(TF0, TF0, TF0, TF1, TF1)
DL_TFC19	(TF1, TF0, TF0, TF1, TF1)
DL_TFC20	(TF2, TF1, TF1, TF1, TF1)
DL_TFC21	(TF0, TF0, TF0, TF2, TF1)
DL_TFC22	(TF1, TF0, TF0, TF2, TF1)
DL_TFC23	(TF2, TF1, TF1, TF2, TF1)
DL_TFC24	(TF0, TF0, TF0, TF3, TF1)
DL_TFC25	(TF1, TF0, TF0, TF3, TF1)
DL_TFC26	(TF2, TF1, TF1, TF3, TF1)
DL_TFC27	(TF0, TF0, TF0, TF4, TF1)
DL_TFC28	(TF1, TF0, TF0, TF4, TF1)
DL_TFC29	(TF2, TF1, TF1, TF4, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	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, UL_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_TCF18, 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~~1272~~	RB5: No data RB6: No data RB7: No data RB8: 1272
10	DL_TFC10, DL_TFC25	UL_TFC10, UL_TFC25	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC9, UL_TFC10, UL_TFC15, UL_TFC16, UL_TFC24, UL_TFC25	RB5: 39 RB6: 103 RB7: 60 RB8: 952~~1272~~	RB5: 39 RB6: No data RB7: No data RB8: 1272

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)
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~~1272~~	RB5: 81 RB6: 103 RB7: 60 RB8: 1272
12	DL_TFC12, DL_TFC27	UL_TFC12, UL_TFC27	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC12, UL_TFC15, UL_TFC27	RB5: 39 RB6: 103 RB7: 60 RB8: 1272~~2552~~	RB5: No data RB6: No data RB7: No data RB8: 2552
13	DL_TFC13, DL_TFC28	UL_TFC13, UL_TFC28	DL_TFC0, DL_TFC15, , UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC1, UL_TFC12, UL_TFC13, UL_TFC15, UL_TFC16, UL_TFC27, UL_TFC28	RB5: 39 RB6: 103 RB7: 60 RB8: 1272~~2552~~	RB5: 39 RB6: No data RB7: No data RB8: 2552
14	DL_TFC14, DL_TFC29	UL_TFC14, UL_TFC29	DL_TFC0, DL_TFC15, UL_TFC0, UL_TFC15	UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC14, UL_TFC15, UL_TFC17, UL_TFC27, UL_TFC29	RB5: 81 RB6: 103 RB7: 60 RB8: 1272~~2552~~	RB5: 81 RB6: 103 RB7: 60 RB8: 2552
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.~~

14.2.41.4 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 15 the UE transmitted transport format shall be~~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.

   - 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 952 bits equal to the content of the test data sent by the SS in downlink; and no data shall be received on RB5, RB6 and RB7.

   - for sub-test 10: an RLC SDU on RB8 having the first 952 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 952 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 1272 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 1272 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 1272 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.

<End of modified section>

<Start of next modified section>

14.3 Combinations on PDSCH and DPCH

14.3.1 Interactive or background / UL:64 DL:256 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.1.1 Interactive or background / UL:64 DL:256 kbps / PS RAB / 10 ms TTI

14.3.1.1.1 Conformance requirement

See 14.2.4.1.

14.3.1.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.1 for the downlink 10 ms TTI case.

14.3.1.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (256 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitly tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312~~354~~	RB5: 312~~354~~ ~~(note 2)~~
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632~~708~~	RB5: 632~~708~~ ~~(note 3)~~
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912~~1416~~	RB5: 1272~~1416~~ ~~(note 4)~~
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552~~2832~~	RB5: 2552~~2832~~ ~~(note 5)~~

NOTE ~~1~~: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.
~~NOTE 2: SS is using a DL RLC SDU with 354 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 18 bits of RLC PDU#2.~~
~~NOTE 3: SS is using a DL RLC SDU size of 708 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 36 bits of RLC PDU#2.~~
~~NOTE 4: SS is using a DL RLC SDU size of 1416 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 408 bits of RLC PDU#2.~~
~~NOTE 5: SS is using a DL RLC SDU size of 2832 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2 and the first 144 bits of RLC PDU#3.~~

See 14.1.1 for test procedure.

14.3.1.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1, 2 to 34: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.1.2 Interactive or background / UL:64 DL:256 kbps / PS RAB / 20 ms TTI

14.3.1.2.1 Conformance requirement

See 14.2.4.1.

14.3.1.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.1 for the downlink 20 ms TTI case.

14.3.1.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
TFS	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (256 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354
	DSCH_TF6, bits	16x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312~~354~~	RB5: 312~~354~~ ~~(note 2)~~
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632~~708~~	RB5: 632~~708~~ ~~(note 3)~~
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912~~1416~~	RB5: 1272~~1416~~ ~~(note 4)~~
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552~~2832~~	RB5: 2552~~2832~~ ~~(note 5)~~
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832~~4248~~	RB5: 3832~~4248~~ ~~(note 6)~~
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112~~5664~~	RB5: 5112~~5664~~ ~~(note 7)~~

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.

~~NOTE 2: SS is using a DL RLC SDU with 354 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 18 bits of RLC PDU#2.~~

~~NOTE 3: SS is using a DL RLC SDU size of 708 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 36 bits of RLC PDU#2.~~

~~NOTE 4: SS is using a DL RLC SDU size of 1416 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 408 bits of RLC PDU#2.~~

~~NOTE 5: SS is using a DL RLC SDU size of 2832 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2 and the first 144 bits of RLC PDU#3.~~

~~NOTE 6: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF5). UE will return four RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2, RLC PDU#3 and the first 216 bits of RLC PDU#4.~~

~~NOTE 7: SS is using a DL RLC SDU size of 5664 bits as test data (=DL RLC PDU size for DL/DSCH_TF6). UE will return five RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2, RLC PDU#3, RLC PDU#4 and the first 288 bits of RLC PDU#5.~~

See 14.1.1 for test procedure.

14.3.1.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4, 5 and 6: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1,2,4,5 and to 6: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.2 Interactive or background / UL:64 DL:384 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.2.1 Interactive or background / UL:64 DL:384 kbps / PS RAB / 10 ms TTI

14.3.2.1.1 Conformance requirement

See 14.2.4.1.

14.3.2.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 10 ms TTI case.

14.3.2.1.3 Method of test

Uplink TFS:

		RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312354	RB5: 312354 (note 2)
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632708	RB5: 632708 (note 3)
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 19121416	RB5: 12721416 (note 4)
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 25522832	RB5: 25522832 (note 5)

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~~)
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832~~4248~~	RB5: 3832~~4248~~ ~~(note 6)~~
NOTE ~~1~~: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. <u>RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.</u>						
~~NOTE 2: SS is using a DL RLC SDU with 354 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 18 bits of RLC PDU#2.~~						
~~NOTE 3: SS is using a DL RLC SDU size of 708 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 36 bits of RLC PDU#2.~~						
~~NOTE 4: SS is using a DL RLC SDU size of 1416 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 408 bits of RLC PDU#2.~~						
~~NOTE 5: SS is using a DL RLC SDU size of 2832 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2 and the first 144 bits of RLC PDU#3.~~						
~~NOTE 6: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF5). UE will return four RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2, RLC PDU#3 and the first 216 bits of RLC PDU#4.~~						

See 14.1.1 for test procedure.

14.3.2.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4~~, 5~~ and 5~~6~~: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1<u>,2,4 and</u>~~to~~ 5~~6~~: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - <u>for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.</u>

14.3.2.2 Interactive or background / UL:64 DL:384 kbps / PS RAB / 20 ms TTI

14.3.2.2.1 Conformance requirement

See 14.2.4.1.

14.3.2.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.2 for the downlink 20 ms TTI case.

14.3.2.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x354
	DSCH_TF1, bits	1x354
	DSCH_TF2, bits	2x354
	DSCH_TF3, bits	4x354
	DSCH_TF4, bits	8x354
	DSCH_TF5, bits	12x354
	DSCH_TF6, bits	16x354
	DSCH_TF7, bits	20x354
	DSCH_TF8, bits	24x354

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312~~354~~	RB5: 312~~354~~ ~~(note 2)~~
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632~~708~~	RB5: 632~~708~~ ~~(note 3)~~
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 1912~~1416~~	RB5: 1272~~1416~~ ~~(note 4)~~
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2552~~2832~~	RB5: 2552~~2832~~ ~~(note 5)~~
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 3832~~4248~~	RB5: 3832~~4248~~ ~~(note 6)~~
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112~~5664~~	RB5: 5112~~5664~~ ~~(note 7)~~
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 6392~~7080~~	RB5: 6392~~7080~~ ~~(note 8)~~

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)
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672~~8496~~	RB5: 7672~~8496~~ ~~(note 9)~~

NOTE 1: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.
RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.
~~NOTE 2: SS is using a DL RLC SDU with 354 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 18 bits of RLC PDU#2.~~
~~NOTE 3: SS is using a DL RLC SDU size of 708 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 36 bits of RLC PDU#2.~~
~~NOTE 4: SS is using a DL RLC SDU size of 1416 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return two RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 and the first 408 bits of RLC PDU#2.~~
~~NOTE 5: SS is using a DL RLC SDU size of 2832 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2 and the first 144 bits of RLC PDU#3.~~
~~NOTE 6: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF5). UE will return four RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC PDU#2, RLC PDU#3 and the first 216 bits of RLC PDU#4.~~
~~NOTE 7: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF6). UE will return five RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#4 and the first 288 bits of RLC PDU#5.~~
~~NOTE 8: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF7). UE will return six RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#5 and the first 360 bits of RLC PDU#6.~~
~~NOTE 9: SS is using a DL RLC SDU size of 4248 bits as test data (=DL RLC PDU size for DL/DSCH_TF8). UE will return seven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#6 and the first 432 bits of RLC PDU#7.~~

See 14.1.1 for test procedure.

14.3.2.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4, 5, 6, 7 and 8: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1,2,4,5,6,7 and 8 ~~to 8~~: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 1272 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.3 Interactive or background / UL:64 DL:2048 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.3.3.1 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 10 ms TTI

14.3.3.1.1 Conformance requirement

See 14.2.4.1.

14.3.3.1.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 10 ms TTI case.

14.3.3.1.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_ TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632~~674~~	RB5: 632~~674~~ ~~(note 2)~~
2	DL_DSCH_ TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 1272~~1348~~	RB5: ~~1348 (note 3)~~1272
3	DL_DSCH_ TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 2872~~2696~~	RB5: ~~2696 (note 4)~~2552
4	DL_DSCH_ TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 5112~~5392~~	RB5: ~~5392 (note 5)~~5112
5	DL_DSCH_ TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 7672~~8088~~	RB5: ~~8088 (note 6)~~7672
6	DL_DSCH_ TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 10232~~10784~~	RB5: ~~10784 (note 7)~~10232
7	DL_DSCH_ TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 12792~~13480~~	RB5: ~~13480 (note 8)~~12792
8	DL_DSCH_ TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 15352~~16176~~	RB5: ~~16176 (note 9)~~15352

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)
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 17912~~18872~~	RB5: ~~18872 (note 10)~~17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 20472~~21568~~	RB5: ~~21568 (note 11)~~20472

NOTE 1:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.
~~NOTE 2:~~	~~SS is using a DL RLC SDU with 674 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 2 bits of RLC PDU#3.~~
~~NOTE 3:~~	~~SS is using a DL RLC SDU size of 1348 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 4 bits of RLC PDU#3.~~
~~NOTE 4:~~	~~SS is using a DL RLC SDU size of 2696 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 680 bits of RLC PDU#3.~~
~~NOTE 5:~~	~~SS is using a DL RLC SDU size of 5392 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return five RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#4 and the first 16 bits of RLC PDU#5.~~
~~NOTE 6:~~	~~SS is using a DL RLC SDU size of 8088 bits as test data (=DL RLC PDU size for DL/DSCH_TF5). UE will return seven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#6 and the first 24 bits of RLC PDU#7.~~
~~NOTE 7:~~	~~SS is using a DL RLC SDU size of 10784 bits as test data (=DL RLC PDU size for DL/DSCH_TF6). UE will return nine RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#8 and the first 32 bits of RLC PDU#9.~~
~~NOTE 8:~~	~~SS is using a DL RLC SDU size of 13480 bits as test data (=DL RLC PDU size for DL/DSCH_TF7). UE will return eleven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#10 and the first 40 bits of RLC PDU#11.~~
~~NOTE 9:~~	~~SS is using a DL RLC SDU size of 16176 bits as test data (=DL RLC PDU size for DL/DSCH_TF8). UE will return thirteen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#12 and the first 48 bits of RLC PDU#13.~~
~~NOTE 10:~~	~~SS is using a DL RLC SDU size of 18872 bits as test data (=DL RLC PDU size for DL/DSCH_TF9). UE will return fifteen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#14 and the first 56 bits of RLC PDU#15.~~
~~NOTE 11:~~	~~SS is using a DL RLC SDU size of 21568 bits as test data (=DL RLC PDU size for DL/DSCH_TF10). UE will return seventeen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#16 and the first 64 bits of RLC PDU#17.~~

See 14.1.1 for test procedure.

14.3.3.1.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4, 5, 6, 7, 8, 9 and 10: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1,2,4 to 10: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the DL RLC SDU sent by the SS.

14.3.3.2 Interactive or background / UL:64 DL:2048 kbps / PS RAB / 20 ms TTI

14.3.3.2.1 Conformance requirement

See 14.2.4.1.

14.3.3.2.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.2.3 for the downlink 20 ms TTI case.

14.3.3.2.3 Method of test

Uplink TFS:

	TFI	RB5 (64 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

DSCH downlink TFS:

	TFI	RB5 (384 kbps)
TFS	DSCH_TF0, bits	0x674
	DSCH_TF1, bits	1x674
	DSCH_TF2, bits	2x674
	DSCH_TF3, bits	4x674
	DSCH_TF4, bits	8x674
	DSCH_TF5, bits	12x674
	DSCH_TF6, bits	16x674
	DSCH_TF7, bits	20x674
	DSCH_TF8, bits	24x674
	DSCH_TF9, bits	28x674
	DSCH_TF10, bits	32x674
	DSCH_TF11, bits	36x674
	DSCH_TF12, bits	40x674
	DSCH_TF13, bits	44x674
	DSCH_TF14, bits	48x674
	DSCH_TF15, bits	52x674
	DSCH_TF16, bits	56x674
	DSCH_TF17, bits	60x674
	DSCH_TF18, bits	64x674

DSCH downlink TFCS:

TFCI	RB5
DL_DSCH_TFC0	DSCH_TF0
DL_DSCH_TFC1	DSCH_TF1
DL_DSCH_TFC2	DSCH_TF2
DL_DSCH_TFC3	DSCH_TF3
DL_DSCH_TFC4	DSCH_TF4
DL_DSCH_TFC5	DSCH_TF5
DL_DSCH_TFC6	DSCH_TF6
DL_DSCH_TFC7	DSCH_TF7
DL_DSCH_TFC8	DSCH_TF8
DL_DSCH_TFC9	DSCH_TF9
DL_DSCH_TFC10	DSCH_TF10
DL_DSCH_TFC11	DSCH_TF11
DL_DSCH_TFC12	DSCH_TF12
DL_DSCH_TFC13	DSCH_TF13
DL_DSCH_TFC14	DSCH_TF14
DL_DSCH_TFC15	DSCH_TF15
DL_DSCH_TFC16	DSCH_TF16
DL_DSCH_TFC17	DSCH_TF17
DL_DSCH_TFC18	DSCH_TF18

DCH downlink TFS:

	TFI	DCCH
TFS	DCH_TF0, bits	0x148
	DCH_TF1, bits	1x148

DCH downlink TFCS:

TFCI	DCCH
DL_DCH_TFC0	DCH_TF0
DL_DCH_TFC1	DCH_TF1

Sub-tests:

Sub-test	Downlink TFCS Under test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note 1)	Test data size (bits) (note 1)
1	DL_DSCH_TFC1	UL_TFC1	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 632674	RB5: 674 (note 2)632
2	DL_DSCH_TFC2	UL_TFC2	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 12721348	RB5: 1348 (note 3)1272
3	DL_DSCH_TFC3	UL_TFC3	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 26962872	RB5: 2696 (note 4)2552
4	DL_DSCH_TFC4	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 51125392	RB5: 5392 (note 5)5112
5	DL_DSCH_TFC5	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 80887672	RB5: 8088 (note 6)7672
6	DL_DSCH_TFC6	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1078410232	RB5: 10784 (note 7)10232
7	DL_DSCH_TFC7	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1348012792	RB5: 13480 (note 8)12792
8	DL_DSCH_TFC8	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1617615352	RB5: 16176 (note 9)15352
9	DL_DSCH_TFC9	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1887217912	RB5: 18872 (note 10)17912
10	DL_DSCH_TFC10	UL_TFC4	DL_DSCH_TFC0, DL_DSC_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2156820472	RB5: 21568 (note 11)20472
11	DL_DSCH_TFC11	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2426423032	RB5: 24264 (note 12)23032
12	DL_DSCH_TFC12	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 2696025592	RB5: 26960 (note 13)25592

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)
13	DL_DSCH_ TFC13	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~29656~~28152	RB5: ~~29656 (note 14)~~28152
14	DL_DSCH_ TFC14	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~32352~~30712	RB5: ~~32352 (note 15)~~30712
15	DL_DSCH_ TFC15	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~35048~~33272	RB5: ~~35048 (note 16)~~33272
16	DL_DSCH_ TFC16	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~37744~~35832	RB5: ~~37744 (note 17)~~35832
17	DL_DSCH_ TFC17	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~40440~~38392	RB5: ~~40440 (note 18)~~38392
18	DL_DSCH_ TFC18	UL_TFC4	DL_DSCH_TFC0, DL_DCH_TFC0, DL_DCH_TFC1, UL_TFC0, UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: ~~43136~~40952	RB5: ~~43136 (note 19)~~40952

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)
NOTE 1:	See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs. RB5: the UL RLC SDU size have been choosen such that the UE will return all data received in downlink and that the UL RLC SDU will fill up the uplink transport format set under test over one or several transmission time intervals.					
NOTE 2:	SS is using a DL RLC SDU with 674 bits as test data (=DL RLC PDU size for DL/DSCH_TF1). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 2 bits of RLC PDU#3.					
NOTE 3:	SS is using a DL RLC SDU size of 1348 bits as test data (=DL RLC PDU size for DL/DSCH_TF2). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 4 bits of RLC PDU#3.					
NOTE 4:	SS is using a DL RLC SDU size of 2696 bits as test data (=DL RLC PDU size for DL/DSCH_TF3). UE will return three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1, RLC SDU#2 and the first 680 bits of RLC PDU#3.					
NOTE 5:	SS is using a DL RLC SDU size of 5392 bits as test data (=DL RLC PDU size for DL/DSCH_TF4). UE will return five RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#4 and the first 16 bits of RLC PDU#5.					
NOTE 6:	SS is using a DL RLC SDU size of 8088 bits as test data (=DL RLC PDU size for DL/DSCH_TF5). UE will return seven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#6 and the first 24 bits of RLC PDU#7.					
NOTE 7:	SS is using a DL RLC SDU size of 10784 bits as test data (=DL RLC PDU size for DL/DSCH_TF6). UE will return nine RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#8 and the first 32 bits of RLC PDU#9.					
NOTE 8:	SS is using a DL RLC SDU size of 13480 bits as test data (=DL RLC PDU size for DL/DSCH_TF7). UE will return eleven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#10 and the first 40 bits of RLC PDU#11.					
NOTE 9:	SS is using a DL RLC SDU size of 16176 bits as test data (=DL RLC PDU size for DL/DSCH_TF8). UE will return thirteen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#12 and the first 48 bits of RLC PDU#13.					
NOTE 10:	SS is using a DL RLC SDU size of 18872 bits as test data (=DL RLC PDU size for DL/DSCH_TF9). UE will return fifteen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#14 and the first 56 bits of RLC PDU#15.					
NOTE 11:	SS is using a DL RLC SDU size of 21568 bits as test data (=DL RLC PDU size for DL/DSCH_TF10). UE will return seventeen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#16 and the first 64 bits of RLC PDU#17.					
NOTE 12:	SS is using a DL RLC SDU size of 24264 bits as test data (=DL RLC PDU size for DL/DSCH_TF11). UE will return nineteen RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#18 and the first 72 bits of RLC PDU#19.					
NOTE 13:	SS is using a DL RLC SDU size of 26960 bits as test data (=DL RLC PDU size for DL/DSCH_TF12). UE will return twenty-one RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#20 and the first 80 bits of RLC PDU#21.					
NOTE 14:	SS is using a DL RLC SDU size of 29656 bits as test data (=DL RLC PDU size for DL/DSCH_TF13). UE will return twenty-three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#22 and the first 88 bits of RLC PDU#23.					
NOTE 15:	SS is using a DL RLC SDU size of 32352 bits as test data (=DL RLC PDU size for DL/DSCH_TF14). UE will return twenty-five RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#24 and the first 96 bits of RLC PDU#25.					
NOTE 16:	SS is using a DL RLC SDU size of 35048 bits as test data (=DL RLC PDU size for DL/DSCH_TF15). UE will return twenty-seven RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#26 and the first 104 bits of RLC PDU#27.					
NOTE 17:	SS is using a DL RLC SDU size of 37744 bits as test data (=DL RLC PDU size for DL/DSCH_TF16). UE will return twenty-nine RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#28 and the first 112 bits of RLC PDU#29.					
NOTE 18:	SS is using a DL RLC SDU size of 40440 bits as test data (=DL RLC PDU size for DL/DSCH_TF17). UE will return thirty-one RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#30 and the first 120 bits of RLC PDU#31.					
NOTE 19:	SS is using a DL RLC SDU size of 43136 bits as test data (=DL RLC PDU size for DL/DSCH_TF18). UE will return thirty-three RLC PDUs. The SS creates an UL RLC SDU by concatenating RLC PDU#1 to RLC PDU#32 and the first 128 bits of RLC PDU#33.					

See 14.1.1 for test procedure.

14.3.3.2.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4 to 18: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1,2,4 to 18: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

   - for sub-test 3: an RLC SDU on RB5 having the first 2552 bits equal to the content of the DL RLC SDU sent by the SS.

<End of modified section>

3GPP TSG T WG1 #15
Lund, Sweden, 21ˢᵗ & 24ᵗʰ May 2002
3GPP TSG-T1 SIG Meeting #23
Lund, Sweden, 20ᵗʰ – 22ⁿᵈ May 2002

T1S-020415

T1S-020282

CR-Form-v4

CHANGE REQUEST

⌘	**34.123-1**	**CR**	**246**	⌘ 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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (40ms TTI).	
Source: ⌘	Motorola.	
Work item code: ⌘	TEI	***Date:*** ⌘ 23-Apr-2002
Category: ⌘	**F**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	1.Compliance with 34.108 2.Incomplete Information
Summary of change: ⌘	1. The section 14.2.23c.3 is modified according to 34.108 clause 6.10.2.4.1.23c. for Downlink TFCS List. 2 .The Implicitly tested column for the table "subtests" in section 14.2.23c.3 is modified to include proper TFCIs .
Consequences if not approved: ⌘	Test as specified may incorrectly fail mobiles

Clauses affected: ⌘	14.2.23c.
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	This CR affects R'99 and later releases

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

14.2.23c Interactive or background / UL:32 DL:32 kbps / PS RAB + UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.23c.1 Conformance requirement

See 14.2.4.1.

14.2.23c.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.23c.

14.2.23c.3 Method of test

Uplink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Uplink TFCS:

TFCI	(RB5, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF1, TF0)
UL_TFC2	(TF2, TF0)
UL_TFC3	(TF3, TF0)
UL_TFC4	(TF4, TF0)
UL_TFC5	(TF0, TF1)
UL_TFC6	(TF1, TF1)
UL_TFC7	(TF2, TF1)
UL_TFC8	(TF3, TF1)
UL_TFC9	(TF4, TF1)

Downlink TFS:

	TFI	RB5 (32 kbps)	DCCH
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4, bits	4x336	N/A

Downlink TFCS:

TFCI	(RB5, DCCH)
DL_TFC0	(TF0, TF0)
DL_TFC1	(TF1, TF0)
DL_TFC2	(TF2, TF0)
DL_TFC3	(TF3, TF0)
DL_TFC4	(TF4, TF0)
DL_TFC65	(TF0, TF1)
DL_TFC76	(TF1, TF1)
DL_TFC87	(TF2, TF1)
DL_TFC98	(TF3, TF1)
DL_TFC10 9	(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, UL_TFC0 DL_TFC5,UL_TFC5	UL_TFC0, UL_TFC1, UL_TFC5, UL_TFC6	RB5: 312	RB5: 312
2	DL_TFC2	UL_TFC2	DL_TFC0, UL_TFC0 DL_TFC5 ,UL_TFC5	UL_TFC0, UL_TFC2, UL_TFC5, UL_TFC7	RB5: 632	RB5: 632
3	DL_TFC3	UL_TFC3	DL_TFC0, UL_TFC0 DL_TFC5 ,UL_TFC5	UL_TFC0, UL_TFC3, UL_TFC5, UL_TFC8	RB5: 952	RB5: 952
4	DL_TFC4	UL_TFC4	DL_TFC0, UL_TFC0 DL_TFC5 ,UL_TFC5	UL_TFC0, UL_TFC4, UL_TFC5, UL_TFC9	RB5: 1272	RB5: 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.

14.2.23c.4 Test requirements

See 14.1.1 for definition of step 10 and step 15.

1. At step 10 the UE shall send a RADIO BEARER SETUP COMPLETE message.

2. At step 15 the UE transmitted transport format shall be

   - for sub-test 1: RB5/TF1 (1x336).

   - for sub-test 2: RB5/TF2 (2x336).

   - for sub-test 3: RB5/TF3 (3x336).

   - for sub-test 4: RB5/TF4 (4x336).

3. At step 15 the UE shall return

   - for sub-test 1 to 4: an RLC SDU on RB5 having the same content as the DL RLC SDU sent by the SS.

CR-Form-v6.1

CHANGE REQUEST

⌘	**TS 34.123-1**	CR	**247**	⌘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 **X**   Radio Access Network ☐   Core Network ☐

Title: ⌘	Update of clause 8.3.2 URA Update to be applicable to 3.84 Mcps TDD and 1.28 Mcps TDD	
Source: ⌘	Siemens	
Work item code: ⌘	TEI, LCRTDD	**Date:** ⌘ 30 April 2002
Category: ⌘ **F**		**Release:** ⌘ REL-4

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

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

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:** ⌘ | • Channels and values are specified for 3.84 Mcps and 1.28 Mcps TDD if needed.

• References corrected in 8.3.2.11, 8.3.2.12

• SIBs 3, 4 11 and 12 are specified for test case 8.3.2.13 |
| **Consequences if not approved:** ⌘ | The test proses in TS 34.123-1 cannot test UE correctly. |

Clauses affected: ⌘	

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

Other comments: ⌘	Affects Rel 99 and Rel '4 UE test cases

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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.

8.3.2　URA Update

8.3.2.1　URA Update: Change of URA

8.3.2.1.1　Definition

8.3.2.1.2　Conformance requirement

This procedure is to update UTRAN with the current URA of the UE after a change of URA has occurred in URA_PCH state. It may also be used for supervision of the RRC connection, even if no change of URA takes place.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.1.3　Test purpose

To confirm that the UE executes an URA update procedure after the successful change of URA. To confirm UE responds correctly when it re-selects to a new cell while waiting for URA UPDATE CONFIRM message from SS.

8.3.2.1.4　Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 and 2 are active with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.2.1, while cell 3 is active with URA-ID 2.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 from the list of URA-ID in cell 1.

Test Procedure

Table 8.3.2.1

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 (FDD)	dBm/3.84MHz	-60	-75	-75	-75	-60	-75	-75	-75	-60
P-CCPCH RSCP (TDD)	dBm	-60	-75	-75	-75	-60	-75	-75	-75	-60

The test begins with the downlink power transmission of all cells set according to 'T0' column in table 8.3.2.1. The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. The SS then adjusts the transmission power again according to 'T1' column. This is expected to cause the UE to perform a cell reselection to cell 2. Since same URA identity is broadcasted in cell 1 and 2, the UE shall not perform any URA update procedure due to the change of URA. Next SS adjusts the transmission power according to 'T2' column. UE shall perform a cell reselection to cell 3 and when the UE finds that its current URA-ID 1 is not in the new broadcasted list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message, which includes the IEs "RRC State Indicator" and IE "URA-ID" to the UE on the downlink DCCH. The IE "RRC State Indicator" is set to "URA_PCH". UE returns to URA_PCH state in cell 3 without sending any uplink response message. Next SS adjusts the transmission power according to 'T1' column. UE shall re-select to cell 2 and transmit a URA UPDATE message to SS. However, SS do not acknowledge but adjusts the transmission power according to 'T0' column. UE shall perform cell re-selection to cell 1 and then sent a URA UPDATE message to SS. Finally SS shall transmit URA UPDATE CONFIRM message to UE.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is updated with only 1 URA identity carried currently by cell 1. The starting state of the UE is URA_PCH
2				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.1.
3				UE shall perform a cell reselection but shall not transmit URA UPDATE message with the update cause of "change of URA".
4				SS set the power transmission of all cells according to column 'T2' of table 8.3.2.1.
5	→		URA UPDATE	The UE shall perform a cell reselection first and when it finds that its current URA-ID 1 is not in the newly broadcasted list of URA-IDs, it shall then transmit this message and set value "change of URA" into IE "URA update cause".
6	←		URA UPDATE CONFIRM	Message comprises IE "RRC State Indicator" set "URA_PCH", and also IE "URA Identity" equals to "URA-ID 2".
7				SS set the power transmission of all cells according to column 'T1' of table 8.3.2.1.
8	→		URA UPDATE	
9				SS do not respond to the URA UPDATE message from UE and set the power transmission of all cells according to column 'T0' of table 8.3.2.1.
10	→		URA UPDATE	
11	←		URA UPDATE CONFIRM	

Specific Message Contents

URA UPDATE (Step 5, 8 and 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 '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 2

URA UPDATE CONFIRM (Step 11)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.1.5 Test requirement

After step 2 the UE shall not transmit a URA UPDATE message.

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

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

After step 9 the UE shall find the new cell and transmit a URA UPDATE message setting value "change of URA" into IE "URA update cause".

8.3.2.2 URA Update: Periodical URA update and Reception of Invalid message

8.3.2.2.1 Definition

8.3.2.2.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE when the UE detects that it is still within the service area after the expiry of periodic URA updating timer T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.2.3 Test purpose

To confirm that the UE executes a URA update procedure after the expiry of timer T305. To verify that the UE handles an invalid URA UPDATE CONFIRM message correctly when executing the URA update procedure.

8.3.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305, set according to the value specified in system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". SS replies with an invalid URA UPDATE CONFIRM message sent on downlink CCCH, and check to see if the UE handles this event properly. The UE shall attempt to retransmit the identical URA UPDATE message. After the SS receives the

second URA UPDATE message, it transmits a correct URA UPDATE CONFIRM message, which includes the IE "new U-RNTI", to the UE on the downlink DCCH. Then the UE shall then transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH. The UE returns to CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3		←	URA UPDATE CONFIRM	See specific message content.
4	→		URA UPDATE	UE shall not return to idle mode immediately, but attempts to re-transmit this message.
5		←	URA UPDATE CONFIRM	Including IE "new U-RNTI"
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA 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'
RRC Transaction identifier	Check to see if set to the value given in URA UPDATE CONFIRM message in step 3.
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	ASN.1 violation or encoding error

URA UPDATE CONFIRM (Step 3)

Information Element	Value/remark
All IEs	Not Present

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
SRNC Identity	'0000 0000 0001'
S-RNTI	'0000 0000 0000 0000 1111'

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type IE of this message is checked.

8.3.2.2.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, and transmit a URA UPDATE message which sets the value "periodical cell update" into IE "URA update cause".

After step 3 the UE shall re-transmit URA UPDATE message with IE "Protocol error indicator" set to 'TRUE' and IE "Protocol error information" set to "ASN.1 violation and encoding error".

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and returns to the CELL_FACH state.

8.3.2.3 URA Update: re-entering of service area after T305 expiry

8.3.2.3.1 Definition

8.3.2.3.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE if the UE detects that it is out of service area after the expiry of timer T305, and then subsequently re-enters the service area before the expiry of T307.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.3.3 Test purpose

To confirm that the UE executes a URA update procedure when the UE re-enters the service area before the expiry of timer T307, after being out of service area at the expiry of timer T305.

8.3.2.3.4 Method of test

Initial Condition

System Simulator: 1 cell with URA-ID 1 and the downlink transmission power shown in column marked "T0" in table 8.3.2.3.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 in the list of URA-ID.

Test Procedure

Table 8.3.2.3

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.2.3 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is initially in URA_PCH state. The content of the SYSTEM INFORMATION BLOCK TYPE 3 and 4 is modified. SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.3 so that S<0. When the UE detects the expiry of timer T305 according to the system information, the UE finds that it is out of service area. The UE is expected to search for cell to camp. Then SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 so that S>0. The UE shall detect that it returns to normal service before T307 expires. The UE shall move to CELL_FACH state and starts transmitting a URA UPDATE message which contains the value "re-entered service area" in IE "URA update cause" to the SS on the uplink CCCH. After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "new C-RNTI", and "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts operating from URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.3 such that the cell 1 is no longer suitable for camping i.e. S<0.
3				The UE shall attempt to perform a URA update upon the expiry of timer T305. It shall discover that it is out of service and starts searching for cell to camp.(T307 timer starts)
4				SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 before T307 expires.
5	→		URA UPDATE	Value "re-entered service area" shall be set in IE "URA update cause"
6	←		URA UPDATE CONFIRM	The message includes IEs "new C-RNTI" , and "new U-RNTI"

7	→	UTRAN MOBILITY INFORMATION 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

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	2
BCCH modification time	Not present

URA UPDATE (Step 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'
URA Update Cause	Check to see if set to 're-entered service area'

URA 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	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 1111 1111'
New C-RNTI	Arbitrary 16-bit string which is different the assigned C-RNTI in RRC CONNECTION SETUP message.

8.3.2.3.5   Test requirement

After step 2 the UE shall detect that it is out of service area and shall not send a URA UPDATE on the uplink CCCH channel.

After step 4 the UE shall transmit a URA UPDATE message which sets value "re-entered service area" into IE "URA update cause".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.4 URA Update: loss of service after expiry of timers T307 and T305

8.3.2.4.1 Definition

8.3.2.4.2 Conformance requirement

This procedure is required to handle the case when the UE fails to update UTRAN with the current URA of after expiry of timers T307 and T305 consecutively. The UE shall move to idle mode subsequently.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.4.3 Test purpose

To confirm that the UE moves to idle mode after the expiry of timer T307, following an expiry of timer T305 when it discovers that it is out of service area.

8.3.2.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

Table 8.3.2.4

Parameter	Unit	Cell 1	
		T0	T1
UTRA RF Channel Number		Ch. 1	
CPICH Ec	dBm/3.84MHz	-60	-80
P-CCPCH RSCP (TDD)	dBm	-60	-80

Table 8.3.2.4 illustrates the downlink power to be applied at various time instants of the test execution. Columns marked "T0" denote the initial conditions.

The UE is in URA_PCH 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 8.3.2.3 so that S<0. When the UE detects the expiry of periodic URA updating timer T305 according to the system information, the UE detects that it is out of service area. After the expiry of timer T307, the UE moves to the idle state. SS configures its downlink transmission power settings according to columns "T0" in table 8.3.2.3 so that S>0. SS verifies that UE is in idle mode state by sending a PAGING TYPE 1 message to the UE using UE identity. UE shall respond to this message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				Initially, the UE is in the URA_PCH state.
1a	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 3 and 4	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents).
1b	←		PAGING TYPE 1	Include IE "BCCH modification info"
2				SS configures its downlink transmission power settings according to columns "T1" in table 8.3.2.4 so that the UE detects that it is out of service area.
3				Upon the expiry of timer T305, the UE shall search for cell to camp and triggers T307 timer. SS listens to the uplink CCCH to verify that URA UPDATE message is not transmitted.
4				After the expiry of timer T307, the UE enters idle state.

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

PAGING TYPE 1 (Step 1b)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Paging record list	Not Present
BCCH modification info	
MIB Value tag	2
BCCH modification time	Not present

8.3.2.4.5   Test requirement

After step 2 the UE shall not transmit any URA UPDATE message on the uplink CCCH.

After step 5, UE shall enter idle mode state.

8.3.2.5 URA Update: Success after Confirmation error of URA-ID list

8.3.2.5.1 Definition

8.3.2.5.2 Conformance requirement

UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA of the UE. UTRAN shall respond to the URA UPDATE message by sending a URA UPDATE CONFIRM message. When the indicated URA-ID in the received URA UPDATE CONFIRM message is not found in the list of URA-IDs that is broadcasted in system information block type 2, the UE transmits a URA UPDATE message repeatedly until its internal counter V302 is greater than N302.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.5.3 Test purpose

To confirm that the UE retries to perform the URA update procedure following a confirmation error of URA-ID list.

8.3.2.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

At the start of this test, the UE is brought to URA_PCH state and assigned a URA with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The reason for performing URA updating shall be set to "periodic URA update" in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and IE "URA identity" set to "URA-ID 2" to the UE on the downlink DCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted in system information block type 2, and then the UE shall retry to transmit a URA UPDATE message for a confirmation error of URA-ID list. SS continue to send the same URA UPDATE CONFIRM message until N302+1 URA UPDATE messages have been received. Then SS transmits a URA UPDATE CONFIRM message to the UE which includes IE "URA Identity" set to "URA-ID 1" and IE "new U-RNTI". The UE shall find this URA-ID in its URA-ID list and transmits an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is URA_PCH state. SS initializes counter K to 0
2	→		URA UPDATE	This message shall contain value "periodic URA update" set in IE "URA update cause" after expiry of timer T305.
3				SS increments K by 1. If K is not greater than N302, proceed to step 4. If K is greater than N302, SS proceeds to step 5.
4		←	URA UPDATE CONFIRM	SS transmits this message, setting the value "URA-ID 2" to IE "URA Identity". SS waits for T302 to expire and then returns to step 2.
5		←	URA UPDATE CONFIRM	SS transmits this message, setting IE "URA Identity" to "URA-ID 1". This message also comprises IE "New U-RNTI".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA UPDATE CONFIRM (Step 4)

Use the same message sub-type as specified in Annex A, with the following exceptions:

Information Element	Value/remark
URA Identity	2

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type as specified in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
-SRNC Identity	'0000 0000 0001'
-S-RNTI	'0000 0000 0000 0101 0101'
URA Identity	1

UTRAN MOBILITY INFORMATION CONFIRM (Step 6)

Only the message type IE in this message is checked.

8.3.2.5.5   Test requirement

After step 1 the UE shall detect the expiry of timer T305, move to CELL_FACH state, transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "URA update cause".

After step 4 the UE shall re-transmit a URA UPDATE message after it detects a confirmation error of URA-ID list for the URA-ID indicated in the URA UPDATE CONFIRM message. A total of (N302+1) URA UPDATE messages shall be received by the SS.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.6   URA Update: Failure (V302 is greater than N302: Confirmation error of URA-ID list)

8.3.2.6.1   Definition

8.3.2.6.2   Conformance requirement

UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA of the UE. When the indicated URA-ID in the received URA UPDATE CONFIRM message is not in the list of URA-IDs that is broadcasted in system information block type 2, the UE transmits URA UPDATE messages repeatedly until its internal counter V302 is greater than N302. If V302 is greater than N302 then the UE enters idle state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.6.3   Test purpose

To confirm that the UE make repeated attempts to perform the URA update procedure following a detection of a confirmation error of URA-ID list. It then moves to idle state when internal counter V302 is greater than N302.

8.3.2.6.4   Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is originally in URA_PCH state updated with URA-ID 1. When the UE detects the expiry of timer T305 according to the system information, the UE shall move to CELL_FACH state and transmit a URA UPDATE message to the SS on the uplink CCCH. In this message, the value "periodic URA update" shall be set in IE "URA update cause". After the SS receives this message, it transmits a URA UPDATE CONFIRM message which includes the IE "RRC state indicator" set to "URA_PCH" and indicating the IE "URA Identity" to be "URA-ID 2" to the UE on the downlink DCCH. The UE finds that the indicated URA-ID is not included in the list of URA-IDs broadcasted. Then the UE shall retry to transmit a URA UPDATE message for N302 times and each time the SS responds with the URA UPDATE CONFIRM message similar to the previous one. After that, the UE shall enter idle state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the start of the test. SS sets internal counter K to 0.
2	→		URA UPDATE	The message shall indicate "periodic URA update" in IE "URA update cause". This message is sent following the expiry of timer T305. SS increments counter K by 1.
3	←		URA UPDATE CONFIRM	The SS transmit this message and set IE "URA Identity" to "URA-ID 2". When K is greater than N302 proceeds to step 4, else SS waits for T302 to expire and executes step 2.
4			Void	The UE shall enter idle state.

Specific Message Contents

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type defined in Annex A, with the following exceptions:

Information Element	Value/remark
URA Identity	2

8.3.2.6.5   Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" in IE "URA update cause".

After step 3 and if K is not greater than N302, the UE shall retry to transmit a URA UPDATE message after it detects the confirmation error of URA-ID list for the URA-ID included in the URA UPDATE CONFIRM message.

After step 3 and if K is greater than N302, the UE shall stop transmitting URA UPDATE message and then enters idle state.

8.3.2.7   URA Update: Success after T302 timeout

8.3.2.7.1   Definition

8.3.2.7.2   Conformance requirement

The UE transmits an URA UPDATE message to the UTRAN when it needs to update UTRAN with the current URA identity stored the UE. When the UE fails to receive any URA UPDATE CONFIRM message after T302 timer expires, it transmits a URA UPDATE message repeatedly at an interval of T302 timer value until its internal counter V302 is greater than N302.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.7.3   Test purpose

To confirm that the UE attempts to repeat the URA update procedure upon the expiry of timer T302.

8.3.2.7.4   Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause". The SS ignores this message. The UE shall then retry to transmit a URA UPDATE message after the expiry of timer T302. SS transmits a URA UPDATE CONFIRM message to the UE to end the procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the beginning of test. SS waits for T305 to expire.
2	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T305.
3				SS shall not reply.
4	→		URA UPDATE	This message shall contain value "periodic URA update" in IE "URA update cause" sent upon the expiry of timer T302.
5		←	URA UPDATE CONFIRM	

Specific Message Contents

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type as in Annex A.

8.3.2.7.5   Test requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH. The updating cause shall be set to "periodic URA update" in IE "URA update cause".

After step 3 the UE shall retry to transmit a URA UPDATE message at the expiry of timer T302.

8.3.2.8   Void

8.3.2.9   URA Update: Failure (UTRAN initiate an RRC connection release procedure on CCCH)

8.3.2.9.1   Definition

8.3.2.9.2   Conformance requirement

The UE transmits a URA UPDATE message to the UTRAN when it needs to update UTRAN with information on the current URA of the UE. If the UE receives a RRC CONNECTION RELEASE message on downlink CCCH, it shall enter idle state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.2.9.3   Test purpose

To confirm that the UE moves to idle state upon the reception of RRC CONNECTION RELEASE message on downlink CCCH during a URA update procedure.

8.3.2.9.4   Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of periodic URA updating timer T305, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. The message shall indicate the cause to be "periodic URA update" in IE "URA update cause". The SS transmits 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		RRC CONNECTION RELEASE	SS transmits RRC CONNECTION RELEASE message to the UE on the downlink CCCH.
4				The UE releases L2 signalling radio bearer and radio resources then the UE goes to idle mode.

Specific Message Contents

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

RRC CONNECTION RELEASE (Step 3)

Use the same message sub-type found in Annex A

8.3.2.9.5   Test requirement

After step 1 the UE shall transmit a URA UPDATE message on the uplink CCCH and set value "periodic URA update" into IE "Cell update cause".

After step 3 the UE shall enter idle state.

8.3.2.10   URA Update: Reception of URA UPDATE CONFIRM message that causes invalid configuration

8.3.2.10.1   Definition

8.3.2.10.2   Conformance Requirement

If the UE encounters a URA UPDATE CONFIRM message that set the variable INVALID_CONFIGURATION to TRUE while executing a URA update procedure, it shall check the current value of its internal counter V302. If V302 is not greater than N302, the UE shall re-transmits URA UPDATE message on uplink CCCH, restart T302 timer and increments V302. On the other hand, if V302 is greater than N302, the UE shall abandon cell update procedure and enters idle mode.

8.3.2.10.3   Test Purpose

To confirm that the UE retransmits a URA UPDATE message when it receives a URA UPDATE CONFIRM message that will trigger an invalid configuration in the UE, if the number of retransmissions has not reached the maximum allowed value.

8.3.2.10.4   Method of Test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108.

Test Procedure

The UE is in URA_PCH state. When the UE detects the expiry of timer T305 according to the system information, the UE moves to CELL_FACH state and transmits a URA UPDATE message to the SS on the uplink CCCH. This message shall contain value "periodical URA update" in IE "URA update cause". Upon receiving such a message, the SS replies with a URA UPDATE CONFIRM message with IE "RRC State Indicator" set to "CELL_DCH". The UE shall detect its variable "invalid configuration" is set and re-transmit URA UPDATE message. SS then transmit a valid URA UPDATE CONFIRM UPDATE message to end the procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the URA_PCH state. SS wait until T305 timer has expired.
2	→		URA UPDATE	UE shall transmit this message and set value "periodic URA update" into IE "URA update cause".
3	←		URA UPDATE CONFIRM	
4	→		URA UPDATE	IE "Protocol error indicator" is set to TRUE and IE "Protocol error information" is set to "Information element value not comprehended".
5			Void	
6			Void	
7	←		URA UPDATE CONFIRM	

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'

URA 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'
URA Update Cause	Check to see if set to 'Periodic URA update'
Protocol error indicator	TRUE
Protocol error information	
- Protocol error cause	Information element value not comprehended

URA 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

8.3.2.10.5   Test Requirement

After step 1 the UE shall detect the expiry of timer T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting value "periodic URA update" into IE "URA update cause".

After step 3 the UE shall transmit a URA UPDATE message on the uplink CCCH, setting value 'TRUE" in IE "URA update cause" and value "Information element value not comprehended" in "Protocol error cause".

8.3.2.11 URA Update: Cell reselection to cell of another PLMN belonging to the equivalent PLMN list

8.3.2.11.1 Definition

8.3.2.11.2 Conformance requirement

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

   - URA reselection:

     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

     - if the list of URA identities in system information block type 2 is empty; or

     - if the system information block type 2 can not be found:

       - perform URA update using the cause "change of URA".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred, see clause 5.3.4!.1. in TS 25.304

   - 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. in TS 25.304

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.

8.3.2.11.3 Test purpose

1. To confirm that the UE executes a URA update procedure after a successful reselection of another UTRA cell with a URA identity that is not the URA of the UE and with a PLMN identity different from the original cell but with a PLMN 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 requirements 1, 2 and 3.

2. To confirm that the UE refrains from executing a URA 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: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same PLMN identity as the registered PLMN.

8.3.2.11.4 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 8.3.2.1-1, while cell 2 and cell 3 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored equivalent PLMN list containing PLMN-1 and PLMN-2. The equivalent PLMN list stored in the UE shall not contain PLMN-3. The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.11-1

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		
URA identity		URA-ID 1			URA-ID 2			URA-ID 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	-68	Cell 2 is switched off	-62	-68	Cell 3 is switched off	Cell 3 is switched off	-62

Table 8.3.2.11-1 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 URA UPDATE message

  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	→		URA UPDATE	At T1: Sent in Cell 2 The value "change of URA" set in IE "URA update cause".
3		←	URA UPDATE CONFIRM	
4	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

FFS

8.3.2.11.5 Test requirement

The UE shall send a URA UPATE message after T1 and refrain from sending a URA update (or any other message) after T2.

8.3.2.12 Restricted cell reselection to a cell belonging to forbidden LA list (URA_PCH)

8.3.2.12.1 Definition

8.3.2.12.2 Conformance requirement

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

   - URA reselection:

     - if the UE detects that the current URA assigned to the UE, stored in the variable URA_IDENTITY, is not present in the list of URA identities in system information block type 2; or

     - if the list of URA identities in system information block type 2 is empty; or

     - if the system information block type 2 can not be found:

       - perform URA update using the cause "change of URA".

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   - The cell is part of the selected PLMN or, of a PLMN considered as equivalent by the UE according to the information provided by the NAS.

   - The cell is not barred, see clause 5.3.4.1. in TS 25.304

   - 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. in TS 25.304

3. The Mobile Equipment shall contain a list of "forbidden location areas for roaming", as well as a list of "forbidden location areas for regional provision of service". These lists shall be erased when the MS is switched off or when the SIM is removed, and periodically (with period in the range 12 to 24 hours). The location area identification received on the BCCH that triggered the location updating request shall be added to the suitable list whenever a location update reject message is received with the cause "Roaming not allowed in this location area" or with the cause "Location Area not allowed". The lists shall accommodate each 10 or more location area identifications. When the list is full and a new entry has to be inserted, the oldest entry shall be deleted.

Reference

3GPP TS 25.331 clause 8.3.1.2.

3GPP TS 25.304 clause 4.3.

3GPP TS 24.008 clause 4.4.1.

8.3.2.12.3 Test purpose

To confirm that the UE refrains from selects a UTRA cell and performs a URA update if that cell has a LA identity that is part of the list of LAs stored in the UE as "forbidden location areas for roaming".

   NOTE: Test case in 8.3.2.1 is a test where the UE reselects to a cell with the same LA identity as the LA identity in the original cell.

8.3.2.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in table 8.3.2.1-1, while cell 2 is inactive.

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE.

UE: Shall have stored LA-ID 2 into the list of "forbidden location areas for roaming". The UE shall also have stored the URA identity URA-ID 1 from the list of URA-IDs in cell 1.

Test Procedure

Table 8.3.2.12-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
URA identity		URA-ID 1		URA-ID 2	
LA identity		LA-ID 1		LA-ID 2	
CPICH RSCP (FDD)	dBm	-73	-79	Cell 2 is switched off	-73
P-CCPCH RSCP (TDD)	dBm	-62	-68	Cell 2 is switched off	-62

Table 8.3.2.12-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently.

a) At T1, verify that the UE does not reselect to cell 2 and not send a URA update in cell 2, although cell 2 is the best cell.

Expected sequence

-

Specific Message Contents

-

8.3.2.12.5 Test requirement

The UE shall not send a URA UPDATE (or any other message) in Cell 2 after T1.

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

8.3.2.13.1 Definition

8.3.2.13.2 Conformance requirement

This procedure is to update UTRAN with the current URA of the UE after a change of URA has occurred in URA_PCH state with HCS parameter applied. It may also be used for supervision of the RRC connection, even if no change of URA takes place.

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.

8.3.2.13.3 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 an URA update procedure after the successful change of URA due to HCS Cell Reselection. To confirm UE responds correctly when it re-selects to a new cell while waiting from URA UPDATE CONFIRM message from SS.

8.3.2.13.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1 is active with URA-ID 1 and downlink transmission power shown in column marked "T0" in table 8.3.2.11-1. Cell2 with URA-ID 1 andCell 3 with URA-ID 2 are switched off

UE: URA_PCH (state 6-13) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, with URA-ID 1 from the list of URA-ID in cell 1

Specific Message Content

For system information blocks 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
- $S_{limit,SearchRAT}$	Not Present
- Qrxlevmin	-103 dBm
- Qhyst1$_s$	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
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1$_s$	10 (gives actual value of 20 dB)
- Qhyst2$_s$	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	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
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-103 dBm
- Qhyst1$_s$	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	
- 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
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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	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

Test Procedure

Table 8.3.2.13-1

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T0	T1	T2	T0	T1	T2	T0	T1	T2
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	-61	-61	-61	-80	-80	-67	-80	-73	-73
H* (After PenaltyTime)		15	15	15	-4	-4	9	-4	3	3
R* (After PenaltyTime)		-41	-41	-41	-60	-60	-47	-60	-53	-53

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

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

Expected sequence

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

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
- $S_{search,RAT}$	-32 dB
- $S_{HCS,RAT}$	Not Present
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- $Qhyst1_s$	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
- $S_{search,RAT}$	-32 dB
- $S_{HCS,RAT}$	Not Present
- $S_{limit,SearchRAT}$	Not Present
- Qrxlevmin	-103 dBm
- $Qhyst1_s$	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
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-115 dBm
- Qhyst1$_s$	10 (gives actual value of 20 dB)
- Qhyst2$_s$	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
- $S_{limit,SearchRAT}$	Not Present
- Qqualmin	-20 dB
- Qrxlevmin	-103 dBm
- Qhyst1$_s$	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	
- 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	
- $Qoffset1_{s,n}$	-20dB
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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	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 11 (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
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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
- Qoffset2s,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	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

URA UPDATE (Step 5, 8 and 10)

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0001'
URA Update Cause	Check to see if set to 'change of URA'

URA UPDATE CONFIRM (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 2

URA UPDATE CONFIRM (Step 11)

Use the same message sub-type found in Annex A, with the following exceptions:.

Information Element	Value/remark
URA identity	URA-ID 1

8.3.2.13.5   Test requirement

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

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

CR-Form-v5.1

CHANGE REQUEST

⌘ | **TS 34.123-1** CR **248** | ⌘**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 **X** Radio Access Network ☐ Core Network ☐

Title: ⌘	New test for radio bearer : Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL:(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH (49a).
Source: ⌘	Vodafone Group.
Work item code: ⌘ TEI	***Date:*** ⌘ 08 May 2002

Category: ⌘ **F**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	RAN WG1, in agreement with RAN WG2, have kindly requested T WG1 to consider the new RAB combination above for inclusion in TS 34.108 (Release 99) (see the Liaison Statement TSGR1-02-0669, also known under T1-020198). After approval the associated test would be required in TS 34.123-1.
Summary of change: ⌘	Introduction of the testing of the establishment and data transfer of the configuration mentioned above.
Consequences if not approved: ⌘	Lack of test coverage which may lead to interworking situations.

Clauses affected: ⌘	(new) 14.2.49a.

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

Other comments: ⌘	Affects the 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.

14.2.49a Conversational / speech / UL:(12.2 7.95 5.9 4.75) DL(12.2 7.95 5.9 4.75) kbps / CS RAB + Conversational / unknown / UL:64 DL:64 kbps / CS RAB+ UL:3.4 DL: 3.4 kbps SRBs for DCCH

14.2.49a.1 Conformance requirement

See 14.2.4.1.

14.2.49a.2 Test purpose

Test to verify establishment and data transfer of reference radio bearer configuration as specified in TS 34.108, clause 6.10.2.4.1.49a.

14.2.49a.3 Method of test

See 14.1.2 for test procedure.

Uplink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81(alt. 1x0)	0x103	0x60	0x640	0x148 (alt. 1x0)
	TF1, bits	1x39	1x53	1x60	2x640 (alt. 4x640)	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Uplink TFCS:

TFCI	(RB5, RB6, RB7, 64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0, TF0, TF0, TF0)
UL_TFC1	(TF1, TF0, TF0, TF0, TF0)
UL_TFC2	(TF2, TF1, TF0, TF0, TF0)
UL_TFC3	(TF3, TF2, TF0, TF0, TF0)
UL_TFC4	(TF4, TF3, TF0, TF0, TF0)
UL_TFC5	(TF5, TF4, TF1, TF0, TF0)
UL_TFC6	(TF0, TF0, TF0, TF1, TF0)
UL_TFC7	(TF1, TF0, TF0, TF1, TF0)
UL_TFC8	(TF2, TF1, TF0, TF1, TF0)
UL_TFC9	(TF3, TF2, TF0, TF1, TF0)
UL_TFC10	(TF4, TF3, TF0, TF1, TF0)
UL_TFC11	(TF5, TF4, TF1, TF1, TF0)
UL_TFC12	(TF0, TF0, TF0, TF0, TF1)
UL_TFC13	(TF1, TF0, TF0, TF0, TF1)
UL_TFC14	(TF2, TF1, TF0, TF0, TF1)
UL_TFC15	(TF3, TF2, TF0, TF0, TF1)
UL_TFC16	(TF4, TF3, TF0, TF0, TF1)
UL_TFC17	(TF5, TF4, TF1, TF0, TF1)
UL_TFC18	(TF0, TF0, TF0, TF1, TF1)
UL_TFC19	(TF1, TF0, TF0, TF1, TF1)
UL_TFC20	(TF2, TF1, TF0, TF1, TF1)
UL_TFC21	(TF3, TF2, TF0, TF1, TF1)
UL_TFC22	(TF4, TF3, TF0, TF1, TF1)
UL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Downlink TFS:

	TFI	RB5 (RAB subflow #1)	RB6 (RAB subflow #2)	RB7 (RAB subflow #3)	RB8 (64 kbps)	DCCH
TFS	TF0, bits	0x81 (alt. 1x0)	0x103	0x60	0x640	0x148 (alt. 1x0)
	TF1, bits	1x39	1x53	1x60	2x640 (alt. 4x640)	1x148
	TF2, bits	1x42	1x63	N/A	N/A	N/A
	TF3, bits	1x55	1x84	N/A	N/A	N/A
	TF4, bits	1x75	1x103	N/A	N/A	N/A
	TF5, bits	1x81	N/A	N/A	N/A	N/A

Downlink TFCS:

TFCI	(RB2, RB3, RB4, 64 kbps RAB, DCCH)
DL_TFC0	(TF0, TF0, TF0, TF0, TF0)
DL_TFC1	(TF1, TF0, TF0, TF0, TF0)
DL_TFC2	(TF2, TF1, TF0, TF0, TF0)
DL_TFC3	(TF3, TF2, TF0, TF0, TF0)
DL_TFC4	(TF4, TF3, TF0, TF0, TF0)
DL_TFC5	(TF5, TF4, TF1, TF0, TF0)
DL_TFC6	(TF0, TF0, TF0, TF1, TF0)
DL_TFC7	(TF1, TF0, TF0, TF1, TF0)
DL_TFC8	(TF2, TF1, TF0, TF1, TF0)
DL_TFC9	(TF3, TF2, TF0, TF1, TF0)
DL_TFC10	(TF4, TF3, TF0, TF1, TF0)
DL_TFC11	(TF5, TF4, TF1, TF1, TF0)
DL_TFC12	(TF0, TF0, TF0, TF0, TF1)
DL_TFC13	(TF1, TF0, TF0, TF0, TF1)
DL_TFC14	(TF2, TF1, TF0, TF0, TF1)
DL_TFC15	(TF3, TF2, TF0, TF0, TF1)
DL_TFC16	(TF4, TF3, TF0, TF0, TF1)
DL_TFC17	(TF5, TF4, TF1, TF0, TF1)
DL_TFC18	(TF0, TF0, TF0, TF1, TF1)
DL_TFC19	(TF1, TF0, TF0, TF1, TF1)
DL_TFC20	(TF2, TF1, TF0, TF1, TF1)
DL_TFC21	(TF3, TF2, TF0, TF1, TF1)
DL_TFC22	(TF4, TF3, TF0, TF1, TF1)
DL_TFC23	(TF5, TF4, TF1, TF1, TF1)

Sub-tests:

Sub-test	Downlink TFCS Under Test	Uplink TFCS Under test	Implicitely tested	Restricted UL TFCIs	UL RLC SDU size (bits) (note)	Test data size (bits) (note)
1	DL_TFC5, DL_TFC12	UL_TFC0, UL_TFC12		UL_TFC0, UL_TFC12	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: No data RB6: No data RB7: No data RB8: No data
2	DL_TFC1, DL_TFC13	UL_TFC1, UL_TFC13		UL_TFC0, UL_TFC1, UL_TFC12, UL_TFC13	RB5: 39 RB6: 103 RB7: 60 RB8: 640	RB5: 39 RB6:No data RB7:No data RB8:No data
3	DL_TFC2, DL_TFC14	UL_TFC2, UL_TFC14		UL_TFC0, UL_TFC2, UL_TFC12, UL_TFC14	RB5: 42 RB6: 53 RB7: 60 RB8: 640	RB5: 42 RB6: 53 RB7:No data RB8:No data
4	DL_TFC3, DL_TFC15	UL_TFC3, UL_TFC15		UL_TFC0, UL_TFC3, UL_TFC12, UL_TFC15	RB5: 55 RB6: 63 RB7: 60 RB8: 640	RB5: 55 RB6: 63 RB7:No data RB8:No data
5	DL_TFC4, DL_TFC16	UL_TFC4, UL_TFC16		UL_TFC0, UL_TFC4, UL_TFC12, UL_TFC16	RB5: 75 RB6: 84 RB7: 60 RB8: 640	RB5: 75 RB6: 84 RB7:No data RB8:No data
6	DL_TFC5, DL_TFC17	UL_TFC5, UL_TFC17		UL_TFC0, UL_TFC5, UL_TFC12, UL_TFC17	RB5: 81 RB6: 103 RB7: 60 RB8: 640	RB5: 81 RB6: 103 RB7: 60 RB8:No data
7	DL_TFC6, DL_TFC18	UL_TFC6, UL_TFC18		UL_TFC0, UL_TFC6, UL_TFC12, UL_TFC18	RB5:81 RB6:103 RB7: 60 RB8: 1280 (alt. 2560)	RB5:No data RB6:No data RB7:No data RB8: 1280 (alt. 2560)
NOTE: See TS 34.109 [10] clause 5.3.2.6.2 for details regarding loopback of RLC SDUs.						

14.2.49a.4   Test requirements

See 14.1.2 for definition of step 10 and step 15.

1. At step 10 the UE shall send RADIO BEARER SETUP COMPLETE.

2. At step 15a and step 15b the UE transmitted transport format shall be within the set of restricted TFCIs as specified for the actual sub-test.

3. At step 15a and step 15b the UE shall return

   -   for sub-test 1: an RLC SDU on RB5 having the same content as sent by SS; and no data shall be received on RB6, RB7 and RB8.

   -   for sub-test 2: an RLC SDU on RB5, RB6 and RB7 having the same content as sent by SS; and no data shall be received on RB8.

   -   for sub-test 3, 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.

CR-Form-v5.1

CHANGE REQUEST

| ⌘ | **34.123-1** CR **249** | ⌘**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 Conformance requirement in test case 11.1.4.3	
Source: ⌘	NEC Australia	
Work item code: ⌘	TEI	***Date:*** ⌘ 20th May 2002
Category: ⌘	**F**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	To correct an error in conformance requirement
Summary of change: ⌘	In clause 11.1.4.3.1.2 bullet point 5) text 'automatic secondary PDP context activation re-attempt shall be performed' is replaced with 'no automatic secondary PDP context activation re-attempt shall be performed'.
Consequences if not approved: ⌘	Conformance requirement in contradiction with core specification and not aligned with Test procedure. A correctly implemented UE may not pass the test case.

Clauses affected: ⌘	
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>

11.1.4.3　Abnormal cases

11.1.4.3.1　T3380 Expiry

11.1.4.3.1.1　Definition

11.1.4.3.1.2　Conformance requirement

1) On the first expiry of the timer T3380, the UE shall re-send the ACTIVATE SECONDARY PDP CONTEXT REQUEST.

2) On the second expiry of the timer T3380, the UE shall re-send the ACTIVATE SECONDARY PDP CONTEXT REQUEST.

3) On the third expiry of the timer T3380, the UE shall re-send the ACTIVATE SECONDARY PDP CONTEXT REQUEST.

4) On the fourth expiry of the timer T3380, the UE shall re-send the ACTIVATE SECONDARY PDP CONTEXT REQUEST.

5) On the fifth expiry of the timer T3380, the UE shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic secondary PDP context activation re-attempt shall be performed.

Reference

3GPP TS 24.008 clause 6.1.3.2.3 a).

11.1.4.3.1.3　Test purpose

To test the behaviour of the UE when the SS does not reply to ACTIVATE SECONDARY PDP CONTEXT REQUEST message.

11.1.4.3.1.4　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 context

Test procedure

A PDP context is activated by the user and accepted by the SS. Secondary PDP context activation is requested by the user. The UE shall send ACTIVATE SECONDARY PDP CONTEXT REQUEST message five times with T3380 seconds between each message. After this, no further ACTIVATE SECONDARY PDP CONTEXT REQUEST messages shall be sent by the UE.

Expected sequence

Step	Direction		Message	Comments
	UE	**SS**		
1	UE			Initiate a PDP context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4	UE			Initiate a secondary PDP context activation
5	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request a Secondary PDP context activation
6		SS		T3380 seconds
7	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request the Secondary PDP context activation
8		SS		T3380 seconds
9	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request the Secondary PDP context activation
10		SS		T3380 seconds
11	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request the Secondary PDP context activation
12		SS		T3380 seconds
13	→		ACTIVATE SECONDARY PDP CONTEXT REQUEST	Request the Secondary PDP context activation
14		SS		Wait for T3380 seconds to ensure no further ACTIVATE SECONDARY PDP CONTEXT REQUEST messages are sent by the UE

Specific message contents

None.

11.1.4.3.1.5   Test requirements

UE shall re-send the ACTIVATE SECONDARY PDP CONTEXT REQUEST to SS five times in order to initiate a Secondary PDP context, with expiry of timer T3380 between messages. After fifth try, UE shall send no more ACTIVATE SECONDARY PDP CONTEXT REQUEST messages to SS.

<End of modified section>

3GPP TSG-T1 Meeting #15	***Tdoc T1-020419***
3GPP TSG-T1S Meeting #23	***Tdoc T1S020231r1***
Lund, Sweden, 20th - 24nd May 2002	

CR-Form-v5.1

CHANGE REQUEST

⌘	**34.123-1** CR **250**	⌘**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 in test case 11.4.1 Error cases	
Source: ⌘	NEC Australia	
Work item code: ⌘	TEI	***Date:*** ⌘ 20th May 2002
Category: ⌘ **F**		***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘	1. Conformance requirement not in line with core specification 2. Test procedure not in line with Expected sequence
Summary of change: ⌘	1. Updated Conformance requirement for core specificastion 2. Added ICS/IXIT statements 3. Modified Test procedure to test Conformance requirement 4. Modified Expected sequence to be in line with Test procedure
Consequences if not approved: ⌘	A correctly implemented UE may not pass the test case.

Clauses affected: ⌘	11.4.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☒ Test specifications 34.123-3 ☐ O&M Specifications
Other comments: ⌘	Affects R99 and REL-4

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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.

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<Start of modified section>

11.4 Unknown or Unforeseen Transaction Identifier/Non-semantical Mandatory Information Element Errors

11.4.1 Error cases

11.4.1.1 Definition

11.4.1.2 Conformance requirement

The mobile station shall ignore a session management message with TI EXT bit = 0. Otherwise, the following procedures shall apply:

- 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 recognized 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.

- When a REQUEST PDP CONTEXT ACTIVATION message is received with a transaction identifier flag set to "1", this message shall be ignored.

When on receipt of a message,

- an "imperative message part" error; or

- a "missing mandatory IE " error.

is diagnosed or when a message containing:

- a syntactically incorrect mandatory IE; or

- an IE unknown in the message, but encoded as "comprehension required"; or

- an out of sequence IE encoded as "comprehension required".

is received, the UE shall proceed as follows:

— If the message was a SM message, except DEACTIVATE PDP CONTEXT REQUEST and REQUEST PDP CONTEXT ACTIVATION, the SM-STATUS message with cause # 96 "invalid mandatory information" shall be returned.

   a) If the message is a DEACTIVATE PDP CONTEXT REQUEST, a DEACTIVATE PDP CONTEXT ACCEPT message shall be returned. All resources allocated for that context shall be released.

   b) If the message is a REQUEST PDP CONTEXT ACTIVATION, a REQUEST PDP CONTEXT REJECT message with cause # 96 "Invalid mandatory information" shall be returned.

– If a mobile station receives a GMM message or SM message with message type not defined for the PD or not implemented by the receiver, it shall return a status message (GMM STATUS or SM STATUS depending on the protocol discriminator) with cause #97 'message type non-existent or not implemented'.

– If the mobile station receives a message not compatible with the protocol state, the mobile station shall ignore the message except for the fact that, if an RR connection exists, it returns a status message (STATUS, MM STATUS depending on the protocol discriminator) with cause #98 "Message type not compatible with protocol state". When the message was a GMM message the GMM-STATUS message with cause #98 "Message type not compatible with protocol state" shall be returned. Wwhen the message was a SM message the SM-STATUS message with cause #98 'Message type not compatible with protocol state' shall be returned.

Other syntactic errors.

This clause applies to the analysis of the value part of an information element. It defines the following terminology:

- An IE is defined to be syntactically incorrect in a message if it contains at least one value defined as 'reserved', or if its value part violates syntactic rules given in the specification of the value part. However it is not a syntactical error that a type 4 standard IE specifies in its length indicator a greater length than possible according to the value part specification: extra bits are ignored.

Reference

3GPP TS 24.008 clauses 8.3.2, 8.4 and 8.5 ~~and~~

3GPP TS 24.007 clause 11.4.2.

11.4.1.3 Test purpose

To test the behaviour of the UE when messages with unknown or unforeseen transaction identifiers or non-semantical mandatory information element errors occur.

11.4.1.4 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 context activation

 ~~None.~~

Test procedure

A PDP context activation is requested by the SS with the transaction identifier set to '1'. The UE shall not respond to this request.

A PDP context is then activated from the UE. ~~Two~~An invalid accept messages ~~are~~is ~~then~~ sent by the SS. The UE replies with SM STATUS message. ~~with~~After T3380 seconds UE sends second autogenerated ACTIVATE PDP CONTEXT REQUEST message~~between them~~. SS again replies with invalid ACTIVATE PDP CONTEXT ACCEPT and UE returns SM STATUS message. After ~~a~~ further T3380 seconds UE sends third autogenerated ACTIVATE PDP CONTEXT REQUEST message. SS replies with unknown message and UE returns SM STATUS with cause #97 'message type non-existent or not implemented'. After T3380 seconds the UE sends next autogenerated ACTIVATE PDP CONTEXT REQUEST message, SS repies with MODIFY PDP CONTEXT REQUEST and UE returns SM STATUS with cause #98 'message type not compatible with protocol state'. After T3380 seconds the UE sendes last autogenerated ACTIVATE PDP CONTEXT REQUEST message. SS replies with ~~a~~valid accept message. ~~is sent by the SS.~~

~~A deactivation message is then sent from the SS with the transaction identifier set to '111'. The UE shall reply with a SM STATUS message with transaction identifier set to '111'.~~

A deactivate message is then sent from the SS with a different transaction identifier to the one used in the activate request message sent by the UE. The UE shall reply with a SM STATUS message with cause #81 'invalid transaction identifier value'.

~~Three~~ Two invalid modification messages are then sent to the UE in turn. The UE shall respond each time with a SM-STATUS message with cause # 96 "invalid mandatory information".

Last MODIFY PDP CONTEXT message sent from SS has TI EXT bit = 0. The UE does not respond to this message.

Expected sequence

Step	Direction UE	Direction SS	Message	Comments
1		←	REQUEST PDP CONTEXT ACTIVATION	Request the activation of a PDP context with the transaction identifier flag set to "1"
2		SS		Wait T3385~~30~~ seconds to ensure UE does not request context activation
3	UE			Initiate a context request
4	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context from the UE
5		←	ACTIVATE PDP CONTEXT ACCEPT	Unknown IE encoded as 'comprehension required'
6	→		SM STATUS	Cause set to #96
7		SS		Wait T3380 seconds
8	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context from the UE (auto-generated)
9		←	ACTIVATE PDP CONTEXT ACCEPT	Out of sequence IE encoded as 'comprehension required'
10	→		SM STATUS	Cause set to #96
11		SS		Wait T3380 seconds
12	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context from the UE (auto-generated)
13		←	UNKNOWN MESSAGE	Message with unknown message type
14	→		SM STATUS	Cause set to #97
15		SS		Wait T3380 seconds
16	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context from the UE (auto-generated)
17		←	MODIFY PDP CONTEXT REQUEST	Request modification of PDP context
18	→		SM STATUS	Cause set to #98
19		SS		Wait T3380 seconds
20	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context from the UE (auto-generated)
~~13~~21		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
~~16~~22		←	DEACTIVATE PDP CONTEXT REQUEST	Try to deactivate the context with a different transaction identifier to that used to activate the context
~~17~~23	→		SM STATUS	Cause set to # 81
~~18~~24		←	MODIFY PDP CONTEXT REQUEST(NETWORK TO UE DIRECTION)	Request the modification of the PDP context ('New QoS' mandatory IE missing in the message)
~~19~~25	→		SM STATUS	Cause set to # 96
~~20~~26		←	MODIFY PDP CONTEXT REQUEST(NETWORK TO UE DIRECTION)	Request the modification of the PDP context (with 'Requested LLC SAPI' set to reserved value '1100')
~~21~~27	→		SM STATUS	Cause set to # 96
~~22~~28		←	MODIFY PDP CONTEXT REQUEST(NETWORK TO UE DIRECTION)	Request the modification of the PDP context (TI EXT bit = 0)
29		SS		Wait T3386 seconds to ensure UE does not respond

11.4.1.5 Test requirements

TBD.

<End of modified section>